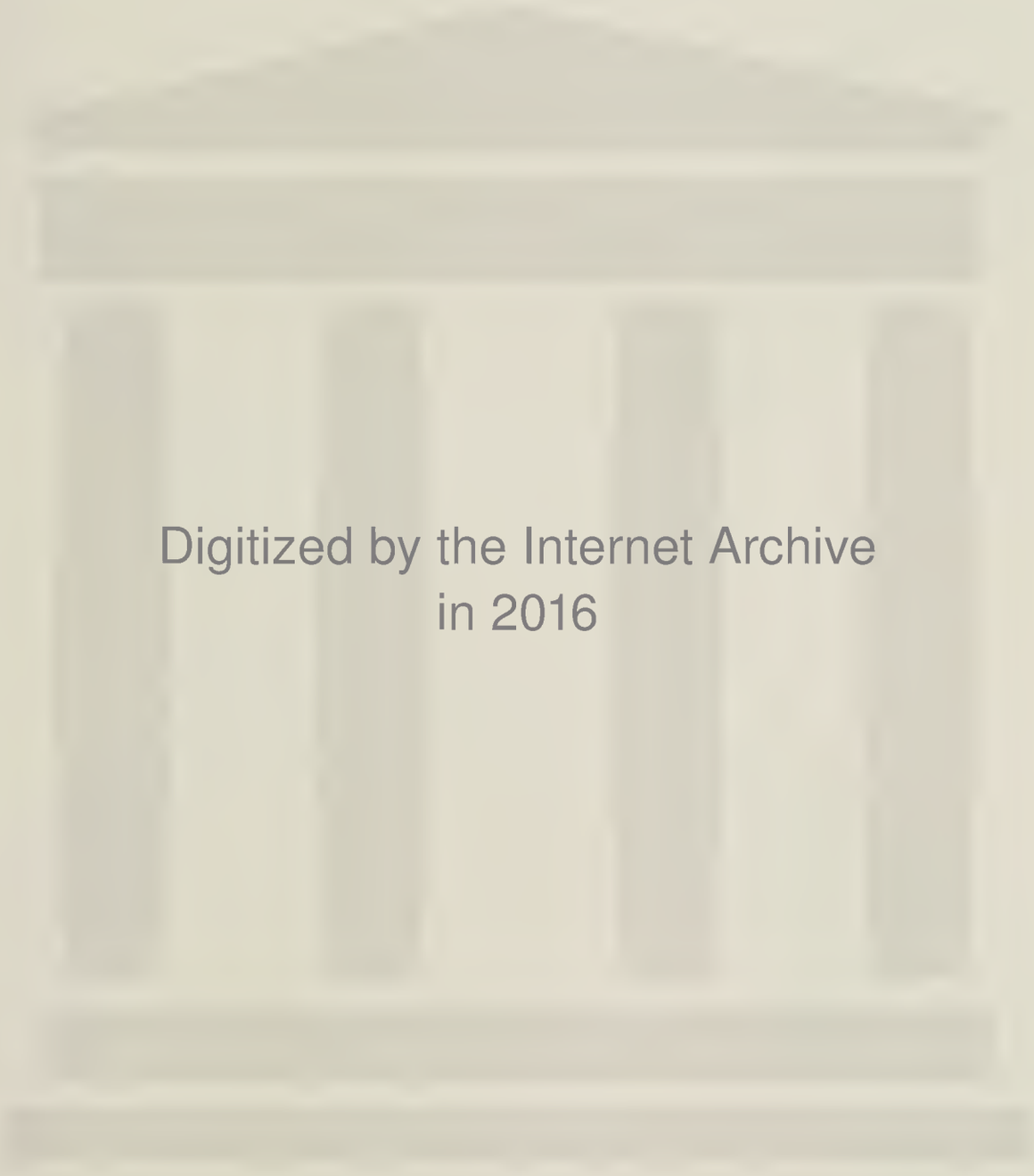
UC-NRLF
C 3 257 463


Digitized by the Internet Archive
in 2016

https://archive.org/details/arizonamedicinej331unse

Arizona Medicine

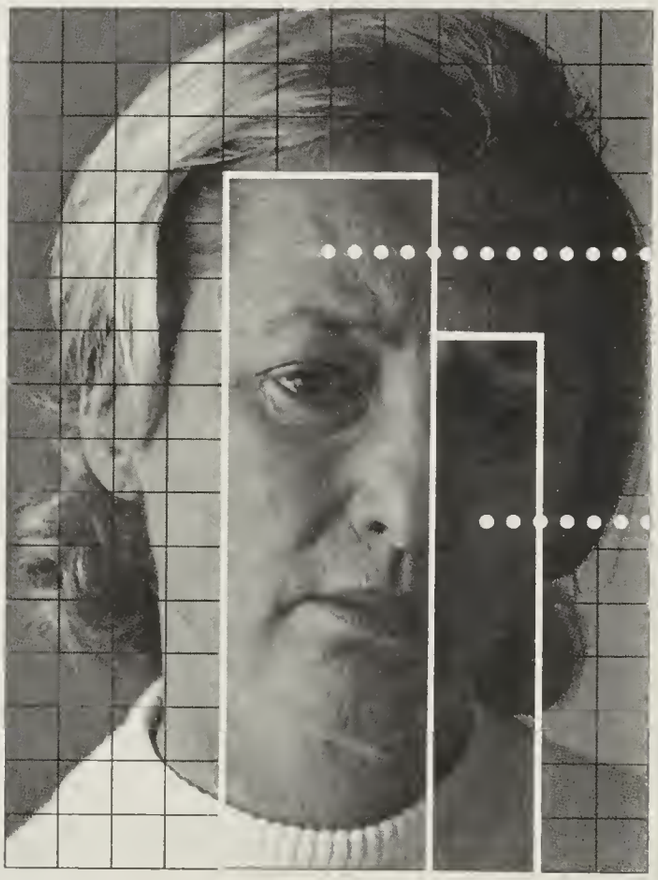
Seminars in Chest Medicine

The A.M.S.A. Report

UNIVERSITY OF CALIFORNIA MEDICAL CENTER LIBRARY SAN FRANCISCO
FEB 1976

ARIZONA MEDICINE

Both often



Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequenc and/or severity of grand mal seizures ma require increased dosage of standard ant convulsant medication; abrupt withdrawa may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and mus cle cramps, vomiting and sweating). Keep addiction-prone individuals under careful

respond to one

According to her major
mptoms, she is a psychoneu-
tic patient with severe
ıxiety. But according to the
scription she gives of her
elings, part of the problem
ay sound like depression.
ıis is because her problem,
hough primarily one of ex-
ssive anxiety, is often accom-
nied by depressive symptom-
ology. Valium (diazepam)
n provide relief for both—as
excessive anxiety is re-
ved, the depressive symp-
ns associated with it are also
en relieved.

There are other advan-
ges in using Valium for the
ınagement of psychoneu-
ic anxiety with secondary
pressive symptoms: the
chotherapeutic effect of
lium is pronounced and
id. This means that im-
vement is usually apparent
in the patient within a few days rather than in a week or two, although it may take longer in some patients. In addition, Valium (diazepam) is generally well tolerated; as with most CNS-acting agents, caution patients against hazardous occupations requiring complete mental alertness.

Also, because the psychoneurotic patient's symptoms are often intensified at bedtime, Valium can offer an additional benefit. An *h.s.* dose added to the *b.i.d.* or *t.i.d.* treatment regimen can relieve the excessive anxiety and associated depressive symptoms and thus encourage a more restful night's sleep.



Valium® (diazepam) IV

2-mg, 5-mg, 10-mg scored tablets

in psychoneurotic
anxiety states
with associated
depressive symptoms

veillance because of their predisposi-
to habituation and dependence. In
gnancy, lactation or women of child-
ring age, weigh potential benefit
inst possible hazard.

cautions: If combined with other psy-
tropics or anticonvulsants, consider
efully pharmacology of agents em-
ved; drugs such as phenothiazines,
cotics, barbiturates, MAO inhibitors
other antidepressants may potentiate
action. Usual precautions indicated in
ents severely depressed, or with latent
ression, or with suicidal tendencies.
Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

YOU ARE THE JUDGE

the evidence is in.

	LETTER® (sodium levothyroxine, Armour) Tablets	SYNTHROID® (sodium levothyroxine)
Sodium levothyroxine:	YES	YES
Less Expensive:	YES*(Costs 10% less)	NO
Potency Coded Tabs:	YES (Armacode®)	NO
Color-Coded Tabs:	YES	YES
Scored Tabs:	YES	YES
7 Tablet potencies:	YES (0.15 mg. is new)	NO

EXHIBIT "A"

Doctor: Please write your verdict.

*American Druggist Blue Book, 1975

LETTER®

(Sodium Levothyroxine, Armour) Tablets

Armour Pharmaceutical Company, Phoenix, Arizona 85077

JANUARY 1976/Vol. 33, No. 1

ARIZONA MEDICINE

JOURNAL OF ARIZONA MEDICAL ASSOCIATION • MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

EDITOR'S PAGE

PREVENTIVE MEDICINE: WHITHER GOETH THOU?, 31
John W. Kennedy, M.D.

DEAN'S PAGE
THE OFFICE OF CONTINUING MEDICAL EDUCATION AND OUTREACH, 32

EDITORIAL

MORE ON MALPRACTICE, 38
Darwin W. Neoubauer, M.D.

INTEREST, 38
William B. McGrath, M.D.

DIRECTORY

Medical Society of the United States and Mexico, 66

Sociedad Medica de Estados Unidos do Northe America y Mexico, 66

Officers and Committees, 66

Index to Advertisers, 74

COVER

We are pleased to introduce two new sections. Seminars in Chest Medicine page 43, and The A.M.S.A. Report page 51.

ORIGINAL ARTICLES
CANCER OF THE DIGESTIVE SYSTEM AMONG AMERICAN INDIANS, 15
Maurice L. Sievers, M.D.
AIR LARYNGOGRAM, 21
Jean-Paul Bierny, M.D.

CLINICAL ONCOLOGY IN ARIZONA
MANAGEMENT OF TESTICULAR CARCINOMA, 33
Theodore L. Mobley, M.D.
Robert H. Thoeny, M.D.
David King, M.D.

SEMINARS IN ENDOCRINOLOGY AND METABOLISM
HEAD AND NECK IRRADIATION: ITS ROLE IN THE PRODUCTION OF THYROID GLAND ABNORMALITIES INCLUDING CANCER, 36
Marshall B. Block, M.D.

DEPARTMENT OF HEALTH SERVICES
EARLY AND PERIODIC SCREENING, DIAGNOSIS AND TREATMENT PROGRAM (EPSDT), 39
Suzanne Dandoy, M.D.

RADIOLOGY CASE OF THE MONTH
CASE NUMBER 6, 41
Tim B. Hunter, M.D.
Alan C. Winfield, M.D.

SEMINARS IN RESPIRATORY DISEASE, 43
Robert J. Clark, M.D.
Lynn Taussig, M.D.
William C. Weese, M.D.

TOPICS OF CURRENT MEDICAL INTEREST
MEDICAL ETHICS: SOME USES, ABUSES AND LIMITATIONS, 44
K. Danner Clouser, Ph.D.

LETTERS TO EDITOR, 49

BOOK REVIEW, 50
Daniel B. Carroll, M.D.

THE A.M.S.A. REPORT
INTRODUCING A.M.S.A., 51
Kathy Reed, President

ARMA MEDICAL HISTORY
THE NAVAJO NATION HEALTH FOUNDATION: THE SEQUEL TO SALSBURY, 52
Wallace J. Mulligan, M.D.

COLONIAL MEDICINE AND BENJAMIN FRANKLIN, 55
Hayes W. Caldwell, M.D.

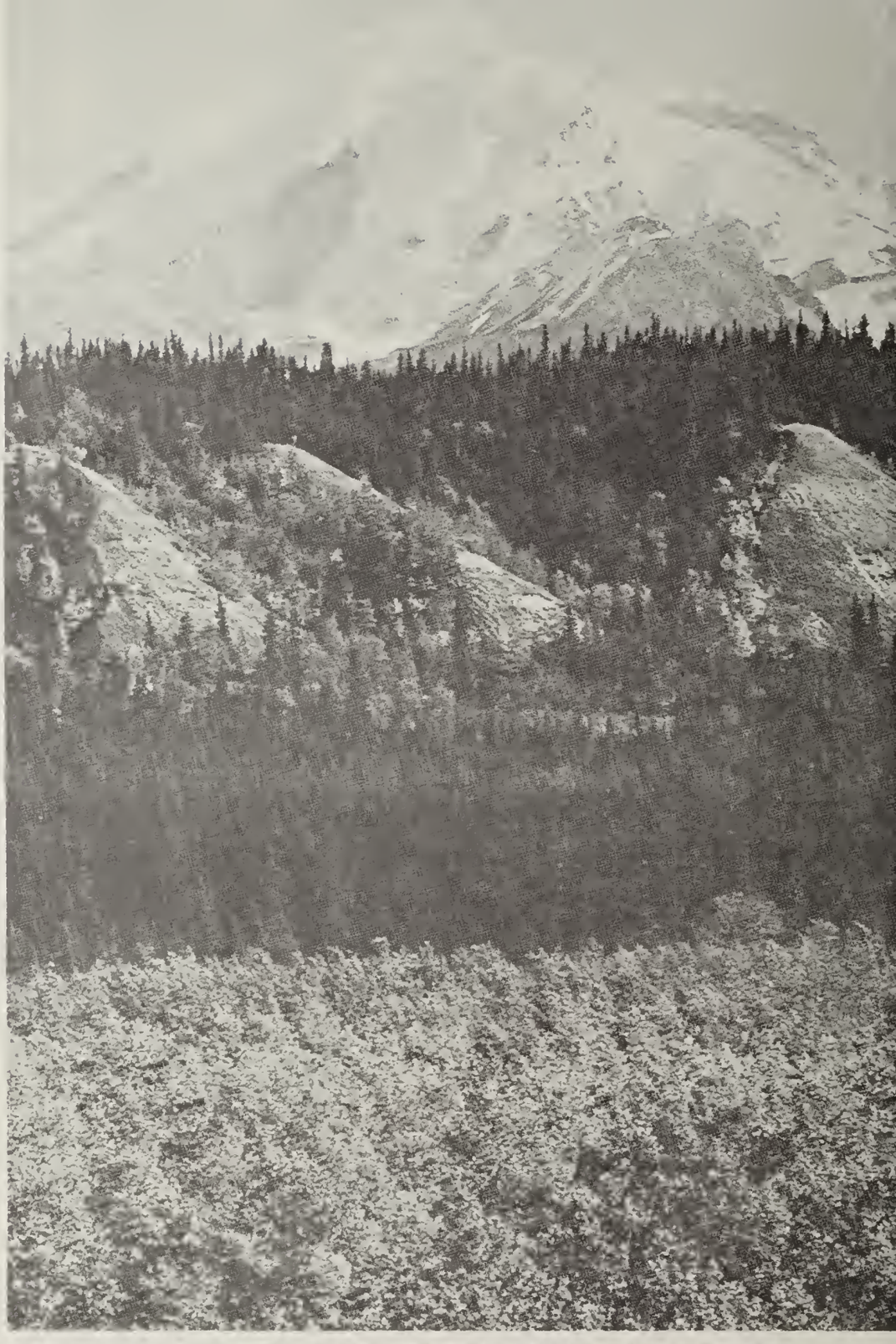
ARMA REPORTS, 60

FUTURE MEDICAL MEETINGS, 62

Published monthly by The Arizona Medical Association, Inc., with offices at 810 W. Bethany Home Rd., Phoenix, Arizona 85013. Subscription $10 a year, single copy $1.00. Second class postage paid at Phoenix, Arizona, and at additional mailing offices.

317628

Join the
Arizona Medical Association, Inc.
Alaskan Adventure Air·Sea Cruise



Departing Phoenix & Tucson on June 25, 1976 from $1098

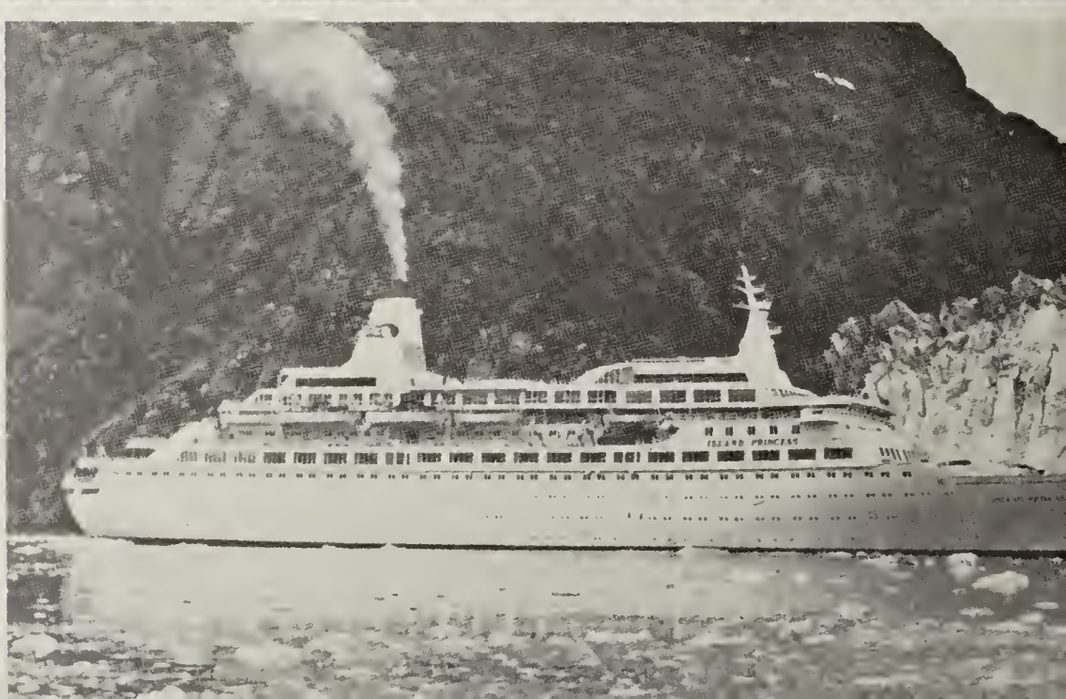
Fly by private chartered jet direct to Vancouver, British Columbia, to board your floating resort hotel, Princess Cruise Line's Island Princess. Then glide through the Inside Passage up the coast of Canada and the Alaska Panhandle.

Carved thousands of years ago by ice age glaciers, the Inside Passage offers a spell-binding panorama. Cascading waterfalls. Beautiful fjords. Snow-dusted mountains rising from the water's edge. Mile-wide glaciers. Blue crystal ice floating in the sea. Fascinating fishing villages and gold rush towns.

At sea or ashore, everything has been arranged for your pleasure. Participate in optional shore excursions. Shop for soap stone carvings, gold jewelry or furs. Aboard ship, enjoy superb service, memorable cuisine, and nightly entertainment.

The low cost includes round-trip airfair and the cruise, plus transfers and baggage handling.

The good life. We'll show you what it means as you behold America's last frontier. Join us aboard the Island Princess and leave the world in your wake.



Send to: ARIZONA MEDICAL ASSOCIATION, INC.
810 W. Bethany Home Road
Phoenix, AZ 85013

Enclosed is my check for $_____
($100 per person) as deposit.

Names _____

Address _____

City _____

State _____ Zip _____

Home Phone_____ Bus. Phone_____

A non-regimented **INTRAV** Deluxe Adventure

PreSun

(5% PABA LOTION)

may help prevent harmful effects of the sun such as premature aging of skin and skin cancer.*



*Information on file at Westwood Pharmaceuticals Inc.

WESTWOOD
PHARMACEUTICALS INC.
Buffalo, New York 14213

©1974, W. P. Inc

PRACTICE MANAGEMENT WILL SAVE YOU WORRY AND EXPENSE

Every medical practice *needs* a business manager — but most doctors are so busy serving their patients that they don't have the time to set up an office that runs smoothly and profitably. I can help.



A Naval Academy graduate, I have 30 years of training and experience in business law, electronics, personnel training, and property management. My associates were major consultants for NASA's medical facility for Apollo missions.

You will benefit from our knowledge of office staffing and equipment, fee structure, billing collections, office partnerships and liability protection.

Let us survey your procedures and show you how to save time, worry and expense. First talk at no obligation to you.

MEDICAL BUSINESS CONSULTANTS
Philip Kwart, *Director*
3225 North Central Avenue, Suite 300-B
Phoenix, Arizona 85012 Phone (602) 264-3803

WE BIND YOUR PERIODICALS

Preserve your reference journals as beautifully Bound Books. Choose from 30 different colors of durable Library Buckram or Imitation Leather.

$8.00 per volume, including name imprint

Inquire about quantity discounts.

Free local pick up and delivery on 10 volumes or more.

ROSWELL BOOKBINDING

2614 North 29th Avenue
PHOENIX, ARIZONA 85009
272-9338

ARIZONA MEDICINE

Address all correpondence to the
Journal Offices
810 W. Bethany Home Rd.,
Phoenix, Arizona 85013

Bruce E. Robinson
Business Manager

National Representative
John Murphy
State Medical Journal
Advertising Bureau, Inc.
711 South Boulevard
Oakpark, Illinois 60302

"The material in this journal is not copyrighted. We ask that anyone using material from it note the previous publication in ARIZONA MEDICINE."

CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

1. Manuscripts, including references or bibliography, should be typewritten, double-spaced, on one side of the paper only, and the original and a carbon enclosed.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

5. The Journal reserves the right to edit all material.

6. Reprints will be supplied to the author at printing cost.

When you call our computer, it talks back.

That's right. It answers in a clear, *human* voice. And tells you, step by step, exactly how to record a customer account transaction. Repeats itself to assure accuracy. Then gives you a total balance for final verification.

It's all push-button easy, because it's all done by touch-tone telephone. All you do is call in on a special Valley Bank number. And have a nice little chat with our talking Accounts Management computer.

Something else. Immediately upon cut-off each month, all the paper work is handled automatically. Itemized customer statements stuffed, mailed out. Duplicates, recaps, reports sent to you promptly.

So if you average over 100 customer statements a month, get acquainted with our talking computer. We'll introduce you. Just call us. In Phoenix: 261-1666. In Tucson: 792-7370.



A touch-tone phone puts you in touch.

We go out of our way for you.
Valley National Bank

VALLEY NATIONAL BANK

More than 150 offices throughout Arizona
Deposits insured to $40,000 by Federal Deposit Insurance Corporation

Memo



FROM:
Carl T. Kirchmaier, M.D.
Medical Director

Doctor:

A WALL STREET JOURNAL editorial (12/3) said in part:

"You've heard it a thousand times: Government can do it cheaper than private industry because it doesn't make a profit. The implication is that private enterprise pockets profits that a generous government passes along in the form of lower prices.

"The theory is predictably nonsensical, since profit is merely a word applied to particular parts of the economic cost of producing goods and services--the cost of capital and the cost of risk. If government takes over a service, it still must bear these costs by another name, plus bear the additional cost of inefficiencies it is likely to introduce.

"A report prepared by the General Accounting Office showed that it cost almost twice as much in fiscal 1973 for each claim processed by the Social Security Administration than the average of four companies acting as intermediaries in processing similar Medicare claims."

THE HBA LIFE INSURANCE COMPANY
1337 N. FIRST ST. (P.O. BOX 1272), PHOENIX, AZ 85001 (602) 258-4885



Big Balanced Rock, Chiricahua Mountains, Arizona (approx. 1,000 tons)

- Found useful in the management of vertigo* associated with diseases affecting the vestibular system.
- Can relieve nausea and vomiting often associated with vertigo.*
- Usual adult dosage for Antivert/25 for vertigo:* one tablet t.i.d.
- Also available as Antivert (meclizine HCl) 12.5 mg. scored tablets, for dosage convenience and flexibility.
- Antivert/25 (meclizine HCl) 25 mg. *Chewable* Tablets for nausea, vomiting and dizziness associated with motion sickness.

BRIEF SUMMARY OF PRESCRIBING INFORMATION

*INDICATIONS. Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

Effective: Management of nausea and vomiting and dizziness associated with motion sickness.

Possibly Effective: Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation.

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

The administration of meclizine to pregnant rats during the 12-15 day of gestation has produced cleft palate in the offspring. Limited studies using doses of over 100 mg./kg./day in rabbits and 10 mg./kg./day in pigs and monkeys did not show cleft palate. Congeners of meclizine have caused cleft palate in species other than the rat.

Meclizine HCl is contraindicated in individuals who have shown a previous hypersensitivity to it.

WARNINGS. Since drowsiness may, on occasion, occur with use of this drug, patients should be warned of this possibility and cautioned against driving a car or operating dangerous machinery.

Usage in Children: Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

Usage in Pregnancy: See "Contraindications."

ADVERSE REACTIONS. Drowsiness, dry mouth and, on rare occasions, blurred vision have been reported.

More detailed professional information available on request.

ROERIG Pfizer
A division of Pfizer Pharmaceuticals
New York, New York 10017

Antivert®/25
(meclizine HCl) 25 mg. Tablets
for vertigo*



Documented bioavailability...
Regimen flexibility

q.i.d. or q 6h immediately after or between meals

E-Mycin®

erythromycin enteric-coated tablets, Upjohn

250 mg

Formulated for quality...
Priced for economy.

Upjohn

See facing page for brief summary of prescribing information.

J-4889-9

E-MYCIN® TABLETS — 250 mg — For Oral Administration (erythromycin enteric-coated tablets, Upjohn)

E-Mycin Tablets (erythromycin enteric-coated tablets) are specially coated to protect the contents from the inactivating effects of gastric acidity and to permit efficient absorption when administered either immediately after meals or when given between meals on an empty stomach.

Indications: *Streptococcus pyogenes (group A beta-hemolytic streptococci):* Upper and lower respiratory-tract, skin, and soft-tissue infections of mild to moderate severity. Parenteral benzathine penicillin G is considered by the American Heart Association to be the drug of choice in the treatment and prevention of streptococcal pharyngitis and in long-term prophylaxis of rheumatic fever. When oral medication is necessary (because the parenteral route is contraindicated) or if there is known allergy to penicillin, the following recommendations made by the American Heart Association apply: 1) Oral penicillin G or V (where no allergy exists)—This is the drug of choice. Give for a minimum of 10 days; 2) Erythromycin—Give for a minimum of 10 days. A few strains of streptococci resistant to erythromycin have been reported.
Alpha-hemolytic streptococci (virdans group): Short-term prophylaxis against bacterial endocarditis prior to dental or other operative procedures in patients with a history of rheumatic fever or congenital heart disease who are hypersensitive to penicillin. (Erythromycin is not suitable prior to genitourinary surgery where the organisms likely to lead to bacteremia are gram-negative bacilli or the enterococcus group of streptococci.)
Staphylococcus aureus: Acute infections of skin and soft tissue of mild to moderate severity. Resistance may develop during treatment.
Diplococcus pneumoniae: Upper respiratory-tract infections (e.g., otitis media, pharyngitis) and lower respiratory-tract infections (e.g., pneumonia) of mild to moderate degree.
Mycoplasma pneumoniae (Eaton agent, PPLO): In the treatment of primary atypical pneumonia, when due to this organism.
Treponema pallidum: Infections due to this organism.
Corynebacterium diphtheriae and *Corynebacterium minutissimum:* As an adjunct to antitoxin, to prevent establishment of carriers, and to eradicate the organism in carriers. In the treatment of erythrasma.
Entamoeba histolytica: In the treatment of intestinal amebiasis only. Extra-enteric amebiasis requires treatment with other agents.
Listeria monocytogenes: Infections due to this organism.

Contraindication: Contraindicated in patients with known hypersensitivity to erythromycin.

Warning: Safety for use in pregnancy has not been established.

Precautions: Erythromycin is principally excreted by the liver. Caution should be exercised in administering the antibiotic to patients with impaired hepatic function. Surgical procedures should be performed when indicated.

Adverse reactions: The most frequent side effects of erythromycin preparations are gastrointestinal, such as abdominal cramping and discomfort, and are dose-related. Nausea, vomiting, and diarrhea occur infrequently with usual oral doses. During prolonged or repeated therapy, there is a possibility of overgrowth of non-susceptible bacteria or fungi. If such infections occur, the drug should be discontinued and appropriate therapy instituted. Mild allergic reactions such as urticaria and other skin rashes have occurred. Serious allergic reactions, including anaphylaxis, have been reported.

Treatment of overdosage: The drug is virtually nontoxic, though some individuals may exhibit gastric intolerance to even therapeutic amounts. Allergic reactions associated with acute overdosage should be handled in the usual manner—that is, by the administration of adrenalin, corticosteroids, and antihistamines as indicated and the prompt elimination of unabsorbed drug, in addition to all needed supportive measures.

How supplied: 250 mg—in bottles of 100 and in unit-dose packages of 100 enteric-coated tablets. Caution: Federal law prohibits dispensing without prescription.
For additional product information, consult the package insert or see your Upjohn Representative.

Demonstrated bioequivalence of E-Mycin taken immediately after meals or between meals



Regimen A (after meals)—One 250 mg E-Mycin® tablet administered q.i.d. immediately after breakfast, lunch, and dinner, and at bedtime with a snack.

Regimen B (between meals)—One 250 mg E-Mycin tablet administered q 6h at least two hours after meals.

E-Mycin Study CS076 on file at The Upjohn Company. The study was performed with twenty-two normal male adult volunteers utilizing a randomized two-way complete crossover design.

No statistically significant difference in area under the curve was observed from 0-24 hours or 48-72 hours at the 95% confidence level ($p>.05$).

The data clearly demonstrate that E-Mycin, when administered q.i.d. immediately after meals, produced average serum levels equivalent to those obtained when the drug was administered q 6h at least two hours after meals.

E-Mycin®

erythromycin enteric-coated tablets, Upjohn

250 mg

Formulated for quality... priced for economy

Upjohn The Upjohn Company, Kalamazoo, Michigan 49001, U.S.A.

© 1975 The Upjohn Company

MED 8-7 S

Opinion & Dialogue

Should a specially prepared package insert be made available to patients?



Dr. Alexander M. Schmidt
Commissioner,
Food and Drug
Administration



Dr. James H. Sammons
Executive Vice President
of the American
Medical Association

The idea of a so-called patient package insert has been around for a long time. Many physicians already use written instruction sheets to provide patients with information about the drugs they are taking. And some physicians give verbal instructions; but in too many instances these are what I call eye-glazing exercises. I have seen patients sit with glazed eyes listening to a rapid-fire lecture by a hurried physician who has 20 people out in his waiting room. These patients aren't given sufficient understanding and therefore do not follow instructions. So I think the idea of an official package insert for patients is a good one. Perhaps we should really think of this kind of information simply as an extension of drug labeling.

The benefits of patient involvement

Many physicians may not realize how frequently a patient obtains his drug information from Aunt Tillie or the next door neighbor. And this information is almost always bad or irrelevant to the case at hand. Furthermore, the incentive to go along with a prescribed program is slim if the only reading matter the patient receives, along with his prescription, is a bill.

As an educator I am impressed by the principle that the best way to get someone to do something is to involve him in the process. So the

I think there are advantages as well as some real disadvantages in a patient package insert. When you begin to use semi-medical or medical terms to describe complications or possible sequelae of disease or treatment, you may frighten the patient—particularly since the more highly sophisticated patient is not the one who is going to read the insert. The patient who will read it is the one most susceptible to fright and confusion by the language.

On the positive side, a package insert will probably give the patient better insight into why he is being treated the way he is, and it may give the physician a little bit more time. But it does not remove from the physician the need or obligation to explain the insert.

Some pitfalls in the inclusion of side effects

Certainly a patient should be warned of the possibility of serious side reactions—to know what the real dangers are. But it doesn't do a bit of good to indicate that a patient on oral penicillin may develop a rash, itching, or a drop in blood pressure. Or that he may faint. I think the real danger is that fright engendered by the insert may possibly outweigh the potential good.

main purpose of drug information for the patient is to get his cooperation in following a drug regimen.

Preparation and distribution of patient drug information

We would hope to amass information from physicians, medical societies, the pharmaceutical industry and centers of medical learning. The ultimate responsibility for uniform labeling must, however, rest with the Food and Drug Administration. There is nothing wrong with this agency saying, "this information is generally agreed upon and therefore it should be used," as long as our process for getting the information is sound.

Distribution of the information is a problem. In great measure it would depend on the medication in question. For example, in the case of an injectable long-acting progesterone, we would think it mandatory to issue two separate leaflets—a short one for the patient to read before getting the first shot and a long one to take home in order to make a decision about continuing therapy. In this case, the information might be put directly on the package and not removable at all. But for a medication like an antihistamine this information might be issued separately, thus giving the physician the option of distribution. This could preserve the placebo use, etc.

It is in the distribution of patient information that the pharmacist may get involved. As professionals and members of the health-care team and as a most important source of drug information to patients, pharmacists should be responsible for keeping medical and drug records on patients. It is also logical that they should distribute drug information to them.

Realistic problems must be considered

We have to expect that the introduction of an information device will also create new problems. First, how can we communicate complex and sophisticated information to people of widely divergent socioeconomic and ethnic groups? Second, what will we say? And third, how can we counteract the negative attitude of many physicians toward any outside influence or input? Hopefully the medical profession will respond by anticipating the problems and helping to solve them. Assuming we can also solve the difficulty of communicating information to diverse groups throughout the United States, our remaining task will be the inclusion of appropriate material.

What information is appropriate?

In my opinion, technical, chemical and such types of material should not be included. And there is no point in the routine listing of side effects like nausea and vomiting which seem to apply to practically all drugs, unless it is common with the drug. However, serious side effects should be listed, as should information about a medication that is potentially risky for other reasons.

Other pertinent information might consist of drug interactions, the need for laboratory follow-up, and special storage requirements. What we want to include is information that will help increase patient compliance with the therapy.

Positive aspects of patient drug information

Labeling medication for the patient would accomplish a number of good things: the patient could be on the lookout for possible serious side effects; his compliance would increase through greater understanding; the physician would be a better source of information since he would be freer to use his time more effectively; other members of the health-care team would benefit through patient understanding and cooperation; and, finally, the physician-patient relationship would probably be enhanced by the greater understanding on the part of the patient of what the physician is doing for him.

Only the doctor can remove that fear by 20 or 30 minutes of conversation.

I'm not suggesting that we withhold any information from the patient because, first of all, it would be totally dishonest and secondly, it would defeat the very purpose of the insert. I do think that a patient on the birth control pill should know about the incidence of phlebothrombosis.

If you're going to tell a patient the incidence of serious adverse reactions, then you have to tell him that a concerned medical decision was made to use a particular medication in his situation after careful consideration of the incidence of complications or side effects.

Emotionally unstable patients pose a special problem

There are patients who, because of severe emotional problems, could not handle the information contained in a patient package insert. Yet if we are going to have a package insert at all, we just can't have two inserts. I think we might simply have to tell the families of these patients to remove the insert from the package.

Legal implications of the patient package insert

Just what effect would a patient package insert have on malpractice? We could try to avoid any legal implications by pointing out that the physician has selected a particular medication because, in his professional judgment, it is the treatment of choice. For instance, you can't tell everyone taking antihistamines not to work just because a few patients develop extreme drowsiness which can lead to accidents. And what about the very small incidence of aplastic anemia rarely associated with chloramphenicol? If, based on sensitivity studies and other criteria, we decide to employ this particular antibiotic, we do so in full knowledge of this serious potential side effect. It's not a simple problem.

How do we handle an insert for medication used for a placebo effect?

With rare exceptions, physicians no longer use medications for a placebo effect. This question does raise the issue of how a patient may react to receiving a medication without a package insert.

Preparation of the package insert

The development of the insert ought to be a joint operation between physicians, the pharmaceutical industry, the A.M.A. and the F.D.A.

I view the A.M.A.'s role as a coordinator or catalyst. It is the only organization through which the profession as a whole, irrespective of specialty, can speak. It has relatively instant access to all the medical expertise in this country. And it can bring that professional expertise together to ensure a better package insert. The A.M.A. can work in conjunction with the industry that has produced the product and which is ultimately going to supply the insert.

I don't think we should rely, or expect to rely, on legislative committees and their nonprofessional staffs to make these decisions when it is perfectly within the power of the two groups to resolve the issues in the very best American tradition—without the government forcing us to do it. I think the F.D.A. has to be involved, but I'd like them to become involved because they were asked to become involved.

Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005



Kefzol®
cefazolin sodium

Ampoules, equivalent to 250 mg., 500 mg., 1 Gm., and 10 Gm. of cefazolin



Lilly

600062

Additional information available to the profession on request.
Eli Lilly and Company
Indianapolis, Indiana 46206

Original Articles

CANCER OF THE DIGESTIVE SYSTEM AMONG AMERICAN INDIANS

MAURICE L. SIEVERS, M.D.

An interesting survey, quickly read. More studies of this type are needed and to be carried into greater depth. This area of investigation may help us to prevent cancer, even at a time when the cause is not yet evident.

ABSTRACT

Rates for malignant neoplasms of several anatomical sites vary greatly between Indians and non-Indians. A review of published reports regarding cancer of the digestive system in American Indians also reveals ethnic variability in organ involvement. Because studies have obtained information from different sources (death certificates, autopsies, or various clinical records), the available data for Indians differ somewhat in the proportionate distribution among the digestive system organs of malignant neoplasms. Integrated statistics may resolve these differences eventually, but some reasonable conclusions are possible at present.

Among Indians, the digestive system is involved in a greater proportion of malignant neoplasm than in whites. Contributing to this predominance indirectly is the infrequency in Indians of carcinoma of the breast and the lung,

From: Senior Clinician, Internal Medicine and Clinical Research, Phoenix Indian Medical Center, 4212 North 16th Street, Phoenix, Arizona 85016.

Presented at the Fourth Annual Meeting, Association of American Indian Physicians, Green Bay, Wisconsin, July 16 - 18, 1975. The opinions expressed in this paper are those of the author and do not necessarily reflect the views of the Indian Health Service.

major sites of cancer in whites. Directly related factors are the extremely high rate of biliary carcinoma and the moderately increased frequency of hepatoma in Indians. Apparently, the Indian and white rates for cancer of the esophagus, stomach, and pancreas are similar; but malignant neoplasms of the colon occur much less often in Indians than in the U.S. white population. The increased frequency of biliary carcinoma in Indians may be attributable to a very great prevalence of gallstones. A decreased frequency of colon cancer in Indians may relate to a rapid intestinal transit time. Investigation is indicated regarding future trends in diet and in digestive system malignant neoplasms among Indians.

INTRODUCTION

For many years cancer was considered rare among American Indians,[1] but with the advent of improved medical care and increasing longevity, the Indians were found to have significant numbers of malignant neoplasms.[2] However, the primary sites of the malignant lesions vary greatly between Indians and non-Indians. For example, cancer of the lung, which is quite common in the white population, is infrequent in Indians of most tribes.[2,3]

For calendar year 1971, malignant neoplasms were the third leading cause of death among Indians and Alaska Natives in the 24 Reservation States.[4] The age-adjusted rate of death from malignant neoplasms for American Indians and Alaska Natives (84.4/100,000) had a ratio of 0.7 of the U.S. white rate (126.8/100,000).[4] However, the median age of the Indians and Alaska Natives (18.4 years) is 10 years below the U.S. median age (28.1 years).[4] Although 19 percent of the U.S. population is age 55 years or older, only 11.8 percent of the Indian population is in this age group.[4]

This report presents information regarding digestive system malignant neoplasms among American Indians. The data have been derived from published and unpublished studies and statistics and from my observations among southwestern Indians. Unavailability of some specific and comprehensive information has somewhat limited the scope of the presentation.

General

Published reports have derived information regarding malignant neoplasms in Indians from death certificates, autopsies, and hospital records (histology reports, radiology, pathology and surgery files, and tumor or disease registers), or from combinations of these materials. With the exception of a broad utilization of all of these sources, any of these methods has significant limitations in the extent to which it is representative, accurate, and complete.

A 1972 review of all death certificates in the United States for 1950 to 1967 revealed an increasing nonwhite-to-white ratio for age-adjusted cancer death rates.[5] Although the data for nonwhites obviously reflect largely the experiences for blacks, who form the major portion of this population, it is of interest that included among the sites of cancer having nonwhite predominance were the esophagus, stomach, and pancreas. Creagan and Fraumeni[6] later presented statistics for cancer in American Indians derived from the same death certificate analysis for 1950 to 1967. Their findings will be incorporated into the subsequent material to be discussed by individual digestive organs.

This presentation is categorized by digestive organ. In the Indians, malignant neoplasms of the mouth and of the small intestine are infrequent.[6] These two anatomical sites are omitted from the considerations.

Esophagus

The rate of esophageal carcinoma among American Indians is generally stated to be lower than for non-Indians.[6,7,8,9,10] By contrast, Hurst reported in 1964 that carcinoma of the esophagus was the predominant malignant tumor among Alaskan Eskimos, especially in women.[11] However, a 1970 autopsy study by Arthaud found no excessive rate of cancer of the esophagus in Eskimos.[12]

Chronic heavy alcohol drinking has been related to esophageal carcinoma,[13] and the extent of alcohol use among Indians is greater than in the general population.[14] Although an association between cigarette smoking and cancer of the esophagus has also been noted,[13] most southwestern Indians seldom smoke extensively.[14]

Esophageal carcinoma is an infrequent lesion in Indians, but comprehensive data are unavailable to permit precise comparisons of rates for Indians and other ethnic groups or for various tribes.

Stomach

Gastric carcinoma has usually been reported to be somewhat less common among Indians than in the general population[1, 6, 8, 9, 10] Most of the published investigations have emphasized or been limited to one source of data—clinical records, surgical and histological reports, autopsy findings, or death certificates. However, all of these data sources were utilized in a recent study, at Phoenix Indian Medical Center (PIMC) which compared the frequency of gastric carcinoma, pernicious anemia (PA), and peptic ulcer (gastric ulcer/duodenal ulcer, DU), among southwestern Indians.[15] These conditions are often considered together because each has a relationship to altered gastric secretory function.

In the U.S. general population, the rank order of frequency for these four diseases, from most to least prevalent, is: (1) DU, (2) gastric ulcer, (3) gastric carcinoma, and (4) PA.[15*] Among southwestern Indians, gastric carcinoma was overwhelmingly the most frequent and DU, strikingly least common. Based upon published prevalence rates for non-Indians[15*] the 19 Indians with PA and the 64 with gastric carcinoma approximate expected numbers.

Among the gastric carcinoma patients, 94% were full-blooded southwestern Indians, as were 95% of PA patients. Although only 0.5% of the PIMC admissions are non-Indian, 26% of the DU patients were white. In addition, 47% of the DU patients had only partial Indian ancestry.

In the tribes studied, the expected blood group distribution is about 80% blood group O and 20% blood group A. For all 4 diseases, blood group O occurred at the extent predicted (gastric carcinoma, 80%; PA 81%; gastric ulcer 80%; and DU, in 4 of the 6 tested).

The two major tribal categories in the study population are the Piman, or Hohokam, (Pima and Papago tribes) and the Athapascan (Apache and Navajo tribes). Table 1 compares the tribal distribution for gastric carcinoma, gastric ulcer, and all adult hospital admissions. Among the 64 with gastric carcinoma, 42 (66%) were Piman, a significant excess from the 28 expected ($p < 0.001$), and 10 were Athapascan, a major deficit from the 20 predicted from the tribal distribution of all admissions ($p < 0.001$). Only 5 (19%) of the 27 gastric ulcer patients were Piman, instead of the 12 (43%) anticipated ($p < 0.001$). These results suggest that gastric secretory function might differ between the Athapascans and Pimans, but the two tribal groups demonstrated similar rates of achlorhydria.[16] Nonetheless, achlorhydria was more frequent among the southwestern Indians[16] than in whites or blacks.[17]

Table 1

Comparative tribal distribution for all Phoenix Indian Medical Center (PIMC) adult admissions, for patients with gastric carcinoma, and for patients with gastric ulcer, 1956 to 1972.

Tribe	All PIMC Admissions	Gastric Carcinoma		Gastric Ulcer	
	%	%	No.	%	No.
Southwestern (SW)					
Piman	43.2	65.6	42	18.5	5
Athapascan	30.7	15.6	10	37.0	10
Other SW	21.6	14.1	9	29.6	8
Nonsouthwestern	4.0	4.7	3	14.8	4
Non-Indian	0.5	0.0	0	0.0	0
Totals	100.0	100.0	64	100.0	27

[15*] References 1 through 8 in Reference 15.

Gastric acid hyposecretion occurs significantly more often among patients with gallstones than in control subjects.[18] Duodenogastric regurgitation is present in most patients with cholelithiasis,[18] suggesting that bile and pancreatic juice in the stomach may destroy acid-producing parietal cells. All southwestern Indian tribes have much higher frequencies of gallstones and lower prevalences of peptic ulcer than non-Indians,[15,19] but some tribal differences exist in the rates for each of the two conditions. Indeed, for each major grouping of tribes, the prevalence of cholelithiasis maintains a *direct* relationship to the frequency of PA and gastric carcinoma and an *inverse* association with peptic ulcer.[15] Malhorta[20] has also observed a negative correlation in India, between the rates for gallstones and for peptic ulcer. A mutually exclusive state may tend to exist.

Colon

In whites, the colon is the digestive organ most frequently involved by cancer and is a major site of malignant neoplasms in both sexes.[21] Among Indians, carcinoma of the colon is relatively infrequent.[2,3,6,7,8,9,10,19] Of 155 cases of malignant neoplasm discovered in southwestern Indians at PIMC during 1954-1961, only 5 involved the colon.[7] Rudolph and associates[10] reported that only 14% of malignant lesions of the digestive organs in Navajos originated in the large bowel. In an autopsy study of various southwestern tribes at PIMC, Reichenbach[9] found only one case of colon cancer among 53 malignant neoplasms, 21 of which originated in the digestive organs. A comparison of cancer primary sites by race, as derived from death certificate information for the United States, 1950 to 1967, disclosed that the rate for colon cancer in Indians was only 44.3% of the rate for the white population.[6]

Burkitt[22] has presented evidence that residents of developing countries, especially in Africa, seldom develop appendicitis, diverticular disease of the colon, or cancer of the colon and rectum. This British investigator has found a direct relationship between the intestinal transit time and the rates for these diseases in various populations. He has emphasized that intestinal transit time is prolonged with the typical highly refined diet of Western civilization and shortened with the intake of increasing amount of non-absorbable food fiber (especially unprocessed cereal or bran). Thus, a high-residue diet increases stool weight and decreases the period required to traverse the intestine; and there is epidemiologic evidence of a direct association between intestinal transit time and the frequency of colon cancer.

In this regard, fluoroscopic observations at the PIMC during gastrointestinal radiographic examinations have revealed that the barium passes through the intestine extremely rapidly in southwestern Indians.[23] The extent of dietary fiber intake among these Indians has not yet been determined, but an investigation of this type is planned. It is of interest that appendicitis[7] and diverticular disease of the colon,[23] as well as carcinoma of the large bowel,[7,9,10,19] are relatively infrequent in southwestern Indians.

Biliary System

Biliary calculi occur much more frequently among American Indians than in the non-Indian.[7,10,19,23,24] Epidemilogical evidence suggests that cholelithiasis contributes to the development of cancer of the gallbladder, because biliary malignant neoplasm seldom occurs without associated gallstones.[25] Therefore, cholecystic carcinoma would be expected to be more common in Indians than in the general population; and data for several tribes support this premise.[2,3,6,7,8,9,10,19,23,24]

Most published reports include a determination of the proportion of biliary malignancy among a series of consecutive operations on the biliary system; rates of 2%[7] to 5.4%[10] have been

Table 2

Comparison of some characteristics of Indian patients with carcinoma of the stomach and with biliary cancer at the Phoenix Indian Medical Center (PIMC), 1955-1971.

Characteristic	Gastric Carcinoma		Biliary Cancer	
	No.		No.	
Total diagnosed	60		48	
SW tribes*	57		46	
Non-SW tribes*	3		2	
Sex:				
Male	37	(61.7%)	16	(33.3%)
Female	23	(38.2%)	32	(66.7%)
Age (yrs)				
Mean	66.5		63.5	
Range	36-107		39-84	

*Extent of Indian heritage: For gastric carcinoma, of 57 from SW tribes, 56=full, and 3 from non-SW tribes, 2=full; for biliary cancer, all 46 from SW tribes=full, and both of the 2 from non-SW tribes=partial.

reported for Indians, as compared to 0.5% to 3.0% for the general population.[26] Thus, the increased prevalence of cholecystic cancer in Indians may relate not only to the very high rate of gallstones but also, perhaps, to a tendency for the Indians with cholelithiasis to develop carcinoma of the gallbladder somewhat more frequently than the non-Indians. Mexicans, who have a significant extent of Indian heritage,[15] also have gallstones and biliary cancer more often than the general population.[27,28]

In published reports for various tribes, biliary cancer is one of the most frequent malignant neoplasms.[2,3,6,7,8,9,10,19,23] Among Indians, from 33% to 62% of the malignant neoplasms of the digestive system involve the gallbladder.[7,8,9,10] The death certificate data of Creagan and Fraumeni for 1950 to 1967 revealed that, based on the white rates, deaths from gallbladder cancer among Indians were nearly 3 times the number expected for males and almost 4 times the number expected for females.[6]

Between 1955 and 1971, at the PIMC, biliary cancer of the stomach, in 60. Table 2 compares cancer of the stomach, in 60. Table 2 compares some findings for these two primary sites of malignant neoplasm. The mean age (66.5 years) and range (36-107 years) for gastric carcinoma and for biliary cancer (mean, 63.5 years; range, 39-84 years) were similar. Although 67% of the Indians with biliary malignant neoplasm were women, 62% of the patients with carcinoma of the stomach were men.

As mentioned in the discussion of cancer of the stomach, the Pimans (Pima and Papago) had a significant excess of gastric carcinoma ($p < 0.001$) and the Athapascans (Navajo and Apache) a significant deficit, based on expected rates from the tribal distribution of all the PIMC admissions. However, for biliary cancer, each tribe had approximately the expected proportion of affected persons. The ABO blood group distribution for both gastric carcinoma (80.6%=0, 19.4%=A)

Table 3

Variability among published reports in distributions of digestive system malignant neoplasms, in whites and various Indian tribal groups.

Digestive Organ	Ethnic group*						
	White[6]	Indian (tribe)					
		All U.S.[6]	Most U.S.[8]	All SW[7]	All SW[9]	Navajo[10]	Papago[34]
	%	%	%	%	%	%	%
Esophagus	5.2	3.2	0.7	1.8	0.0	0.0	2.6
Stomach	24.7	33.3	20.1	33.3	4.8	25.9	34.2
Colon§	47.1	26.5	31.9	8.8	4.8	14.1	2.6
Liver	1.4	2.2	4.9	8.8	23.8	4.7	5.3
Gallbladder§	3.1	13.2	38.2	33.3	61.9	49.4	36.8
Pancreas	15.6	17.7	4.2	12.3	4.8	4.7	13.2
Other Digestive§	2.9	3.9	0.0	1.8	0.0	1.2	5.3
All digestive system†	30.5 (N=?)	33.1 (N=1,951)	25.2 (N=144)	36.8 (N=57)	39.6 (N=21)	— (N=85)	33.3 (N=38)

*Sources of material: Reference 6, all U.S. death certificates; 8, histological study of selected surgical and autopsy material from many U.S. tribes; 7, integrated data from study of hospital charts, death certificates, autopsy, surgery, and pathology reports of southwestern tribes; 9, autopsy study of southwestern tribes; 10, hospital study of surgery and pathology reports; 34, hospital data, for 1962-1973, retrieved from computer storage system (Reinhard KR: Personal communication to author, 1975).

‡ SW=southwestern tribes.

§ "Colon"=entire large bowel (including rectum); "gallbladder"=entire extrahepatic biliary system (gallbladder and bile ducts); "other digestive system"=small intestine and peritoneum.

† Figures for "All digestive system"=percent of malignant neoplasms of all anatomic sites which involved the digestive organs.

and biliary cancer (76.5=0, 23.5%=A) did not vary significantly from expectations (80%=0, 20%=A).

Pancreas

Diabetics reportedly have an increased prevalence of pancreatic cancer.[29] Since the rate of diabetes mellitus is very high in many tribes,[19] an increased frequency of carcinoma of the pancreas among the Indians might be anticipated. However, Reichenbach noted, in an autopsy study of southwestern Indians,[9] that the frequency of malignant neoplasm of the pancreas approximated the rate for the whites.[27] Muggia[30] has stated that the incidence of pancreatic carcinoma for the Navajo is also about the same as for the non-Indian population. In their 18-year certificate study, Creagan and Fraumeni[6] observed a slight deficit for Indian men (73.5%) and a slight excess for Indian women (121.2%) in comparison with the white rates for malignant neoplasm of the pancreas.

Liver

Malignant hepatomas most often arise in cirrhotic livers.[27,31,32] Therefore, American Indians, who have high rates of excessive alcohol drinking and of Laennec's cirrhosis[14,19] might be expected to have an increased frequency of primary hepatic carcinoma. In addition, viral hepatitis is quite common in most tribes,[19] but there is no evidence that significant numbers of Indians develop postnecrotic cirrhosis, a lesion prominently associated with malignant hepatoma.[31] Cholelithiasis, which is extremely frequent in Indians,[19] has not been related to primary malignant neoplasm of the liver. Most published data reveal a prevalence of hepatic carcinoma among Indians slightly[6] to greatly[7,8,9,10,33,34] exceeding the rate for whites.

CONCLUSIONS

Reports for Indians regarding the distribution of cancer among the digestive organs contain some variations in proportions, as shown in Table 3. The types and sources of data probably account for most of the differences. Despite the limitations of the available statistics, some general conclusions seem warranted.

The digestive system accounts for a slightly greater proportion of malignant neoplasms in Indians than in whites. This predominance relates not only to an infrequency in Indians of carcinoma of the breast and lung,[2,3,6,8,9] major sites of cancer in whites, but also to the unusually high rate of biliary malignancy, a moderately increased frequency of hepatoma, and an apparent similarity of the Indian and white rates for cancer of the esophagus, stomach, and pancreas. However, malignant neoplasm of the colon occurs considerably less often in Indians than in the white population of the United States. In the future, an investigation is desirable in regard to the Indians' trends in diet and in digestive system malignant neoplasms.

REFERENCES

1. Hancock JC: Diseases among Indians. Southwestern Medicine 17:126-129 (April) 1933.
2. Sievers ML: Cancer mortality in Indians. JAMA 222:705 (Nov 6) 1972.
3. Sievers ML: Lung cancer among Indians of the southwestern United States. Ann Intern Med 54:912-915 (May) 1961.
4. U.S. Department of Health Education and Welfare: Indian Health Trends and Services, Washington DC, Government Printing Office, 1971 pp 5 and 32-33.
5. Burbank F, Fraumeni JF, Jr: U.S. Cancer mortality: nonwhite predominance. J Natl Cancer Inst 49:649-659 (Sept) 1972.
6. Creagan ET, Fraumeni JF, Jr: Cancer mortality among American Indians, 1950-67. J Natl Cancer Inst 49:959-967 (Oct) 1972.
7. Sievers ML: The southwestern American Indian's burden: biliary disease. JAMA 182:570-572 (Nov 3) 1962.
8. Dunham LJ, Bailar JC, III, Laqueur GT: Histologically diagnosed cancers in 693 Indians of the United States, 1950-65. J Natl Cancer Inst 50:1119-1127 (May) 1973.
9. Reichenbach DD: Autopsy incidence of diseases among southwestern American Indians. Arch Path 84:81-86 (July) 1967.
10. Rudolph R, Cohen JJ, Gascoigne RH: Biliary cancer among southwestern American Indians. Ariz Med 27:1-4 (Oct) 1970.
11. Hurst EE: Malignant tumors in Alaskan Eskimos: Unique predominance of carcinoma of the esophagus in Alaskan Eskimo Women. Cancer 17:1187-1196 (Sept) 1964.
12. Arthaud JB: Cause of death in 339 Alaskan Natives as determined by autopsy. Arch Path 90:433-438 (Nov) 1970.
13. Seixas FA: Alcohol, a carcinogen? Ca—a Cancer Journal for Clinicians 25:62-65 (Mar/Apr) 1975.
14. Sievers ML: Cigarette and alcohol usage by southwestern American Indians. Amer J Pub Health 58:71-82 (Jan) 1968.
15. Sievers ML: Unusual comparative frequency of gastric carcinoma, pernicious anemia, and peptic ulcer in southwestern American Indians. Gastroenterology 65:867-876 (Dec) 1973.
16. Sievers ML: A study of achlorhydria among southwestern American Indians. Am J Gastroenterology 45:99-108 (Feb) 1966.
17. Sievers ML: Hereditary aspects of gastric secretory function. Race and ABO blood groups in relationship to acid and pepsin production. Amer J Med 27:246-255 (Aug) 1959.
18. Capper WM, Butler TJ, Kilby JO, et al: Gallstones, gastric secretion, and flatulent dyspepsia. Lancet 1:413-415 (Feb 25) 1967.
19. Sievers ML: Disease patterns among southwestern Indians. Pub Health Rep 81:1075-1083 (Dec) 1966.
20. Malhorta SL: Epidemiological study of cholelithiasis among railroad workers in India with special reference to causation. Gut 9:290-295 (June) 1968.
21. American Cancer Society: '74 Cancer Facts and Figures. New York, American Cancer Society, 1974, pp 4-32.
22. Burkitt DP, Walker ARP, Painter NS: Dietary fiber and disease. JAMA 229:1068-1074 (Aug 19) 1974.
23. Goldman SM, Sievers ML, Carlile WK, Cohen SL: Roentgen manifestation of diseases in southwestern Indians. Radiology 103:303-306 (May) 1972.
24. Lam RC: Gallbladder disease among American Indians. Lancet 74:305-309 (Aug) 1954.
25. Kirschbaum JD, Kozoll DD: Carcinoma of the gallbladder and extrahepatic bile ducts: Clinical and pathological study of 117 cases in 13,330 necropsies. Surg Gynec Obstet 74:740-754 (Nov) 1941.
26. Cohen EM: Tumors of the gallbladder and bile ducts in Bockus HL (editor), Gastroenterology (2nd Ed.), Philadelphia, WB Saunders and Co, Vol III, p 814, 1965.
27. Steiner PE: Cancer: Race and Geography, Baltimore, William and Wilkins Co. 1954, pp 167, 191, and 289.
28. Tragerman LJ: Primary carcinoma of gallbladder. Review of 173 cases. Calif Med 78:431-437 (May) 1953.
29. Kessler II: Cancer and diabetes mellitus. A review of the literature. J Chronic Dis 23:579-600 (Jan) 1971.
30. Muggia AL: Diseases among the Navajo Indians. Rocky Mountain Med Jnl 68:39-49 (Nov) 1971.
31. Spiro HM: Clinical Gastroenterology, Toronto, McMillan Co. 1970, pp 962-966.
32. Ackerman LV, del Regato JA: Cancer Diagnosis, Treatment and Prognosis (4th Ed) St. Louis, CV Mosby Co, 1970, pp 574-586.
33. Hesse FG: Incidence of disease in the Navajo Indian. Arch Path 77:553-557 (May) 1964.
34. Reinhard KR: Computer-retrieved data for digestive system malignant neoplasms in the Papago Indians. Unpublished personal communication to the author (May) 1975.

AIR LARYNGOGRAM

JEAN-PAUL BIERNY, M.D.

The air laryngogram is a satisfactory, easily performed alternative to positive-contrast laryngogram.

TECHNIQUE

The rationale of the air laryngogram is to obtain an X-ray beam composed of high-energy protons (higher than 120 KVP) which interact with tissues by Compton effect (dependence on tissue density, i.e., 1 for soft tissue, 2 for bone, 1/1000 for air), rather than low-energy photons (less than 100 KVP) which interact with tissues by photo-electric effect (dependence mostly on the tissues' effective atomic number, i.e., 7.4 for soft tissue, 7.6 for air, 13.6 for bone). At low-energy levels, bones absorb X-rays heavily, thereby standing out prominently as there isn't much difference between soft tissue and air; whereas with high energy there is a great difference between air and soft tissue, and not much between soft tissues and bones. Thus, with high energy, bones and calcifications will be effectively obscured, whereas the laryngeal air shadow will stand out clearly, being sharply contrasted by the soft tissues around it.

Technically, the procedure is very simple. It is performed at 130—140 KVP, with a small focal spot. A 1-mm.-thick brass filter (approximately 6″ x 9″) is taped against the top of the fluoroscopic table at the level of the patient's larynx; (removes low-energy photons present in the lower end of the spectrum of high-energy beams). An important initial step is to take anteroposterior scout films at various, decreasing, manually-set density levels, to decide on the density setting which will produce the best contrast. This is significant, since the "normal"

From: Radiology, Ltd., 5410 East Pima Street, Tucson, Arizona 85712.

density is too dark for good air laryngograms. Fluoroscopic spot films are taken with the usual maneuvers: Quiet breathing, phonation, Valsalva, modified Valsalva, and reverse phonation (saying "e" during inspiration is the best maneuver to show the laryngeal ventricles and cords). Cine can easily be done if warranted. (Example: Dynamic confirmation of vocal cord paralysis.) Fluoroscopy permits ideal positioning of the patient's larynx and timing during the various maneuvers. The exposures are quite short. Lateral fluoroscopic spot films are taken with the same technique, which is particularly helpful when the laryngeal cartilages are heavily calcified.

CASE PRESENTATION

(1) G. S. (Fig. 1) A 31-year-old male sustained multiple injuries during a motor vehicle accident. Intubation attempted upon admission was unsuccessful. Developed difficulty swallowing. Trauma to laryngopharynx during attempted intubation was suspected. Air laryngogram was normal. Barium swallow showed neurologic deficit as etiology for dysphagia.

(2) R. D. (Fig. 2) A 49-year-old male with hoarseness. Air laryngogram, performed to rule out laryngeal lesion, showed no abnormality. Direct laryngoscopy was negative. The patient is improving.

Fig. 1 G.S. Normal laryngogram



a. Phonation (expiratory E): Shows true cords, false cords, lateral walls of laryngeal vestibule, pyriform sinuses.



b. Reverse phonation (inspiratory E): Shows clearly the ballooned-out laryngeal ventricles, and cords.

Fig. 2 R.D. Normal air laryngogram



a. AP quiet breathing: All cords retract well.



b. Modified Valsalva (blowing against tight lips): Shows good distension of pyriform sinuses (the symmetrical lateral identation is caused by the thyroid cartilage which prevents ballooning-out of the sinuses at this level).

Fig. 3 J.M. Squamous cell carcinoma of the larynx



a. Reverse phonation: Swelling of right arytenoid (displacing inter-arytenoid notch to the left), right lateral wall of laryngeal ventricle, right false cord. Laryngeal ventricle well distended, intact. Normal true cords.



b. Valsalva: Normal subglottic area, well squared-off.

(3) J. M. (Fig. 3) A 61-year-old male with hoarseness. Air laryngogram showed swelling of the right arytenoid, right lateral wall of laryngeal vestibule, right false cord and bottom of right pyriform sinus. Direct laryngoscopy and biopsies showed squamous-cell carcinoma involving only the right arytenoid. Edema involved the other areas shown to be swollen on the air laryngogram. The two cords and the subglottic area were intact.

(4) A. L. (Fig. 4) A 64-year-old male with hoarseness for six months, dysphagia for one month, and recent stridor. Indirect laryngoscopy showed a mass in the left false cord extending beyond the left true cord into the subglottis. The air laryngogram showed immobile and grossly swollen left false cord, true cord, and anterior commissure, and gross distention of laryngeal ventricle. The left subglottic area was obviously invaded over a 2-cm. distance on the left, and the glottic airway was reduced to 2 mm. to 3 mm. Pyriform sinuses, lateral walls of laryngeal vestibule and right side of the larynx were intact. Direct laryngoscopy and biopsy showed squamous-cell carcinoma with same extent as shown on air laryngogram, and moderate involvement of the left arytenoid, which was not seen adequately on the air laryngogram.



c. Lateral quiet breathing: Epiglottis, anterior commissure, epiglottis folds well seen. Arytenoids are seen but superimposed on this projection.

Fig. 4 A.L. Squamous cell carcinoma of the larynx



a. AP quiet breathing; normally retracted right cords, immobile grossly swollen left false cord and true cord, glottic aperture narrowed down to 2-3 mm.



b. AP phonation: Normal right false cord, laryngeal ventrical, and true cord. Left side unchanged, left laryngeal ventricle distroted and invaded, exact extent of left subglottic invasion well shown.

Fig. 5 G.W. Tuberculosis of the larynx



a. AP quiet breathing: Good retraction of cords, but smooth overall swelling of glottic area.



b. Phonation: Diffuse swelling involves laryngeal vestibule, all cords, laryngeal ventricles, subglottic area.



c. Lateral quiet breathing: Anterior commissure is well seen, smooth, but diffusely increased in density. Diffuse swelling of the epiglottis with almost complete obliteration of vallecula, swollen aryepiglottic folds blending with swollen arytenoids.

d. Lateral phonation: Anterior commissure is now obliterated by traction on edematous vocal cords.

(5) G. W. (Fig. 5) A 74-year-old female, with a history of smoking more than one pack of cigarettes a day for over forty years, who has had a laparotomy several months earlier for small-bowel obstruction; at this time she was told she had tuberculous peritonitis, but she did not take her treatment. She now complains of hoarseness and pain in the larynx for two months. Indirect laryngoscopy showed "mass in throat." Chest X-ray showed a left upper-lobe infiltrate. Air laryngogram showed diffuse swelling throughout the larynx, but no localized mass that could be called a tumor. It was felt to be compatible with diffuse inflammatory edema, with tuberculosis as the possible etiology. Direct laryngoscopy showed a granular, easily bleeding mass replacing the epiglottis, with much edema involving all cords. The tentative laryngoscopic diagnosis was carcinoma of the epiglottis, possible tuberculosis. The biopsy was swarming with tuberculous bacilli. The patient is rapidly improving with antituberculous therapy.

DISCUSSION

The subglottic area is the most difficult one for the laryngoscopist to see indirectly. The base of the epiglottis, pre-epiglottic space, laryngeal ventricles, and pyriform sinuses, are also difficult areas.

Performance of the positive-contrast laryngogram involves premedication, topical anesthesia, and the dripping of oily contrast material (Dionosil) in the larynx. It is time consuming and implies a certain amount of patient discomfort. At times, a strong gag reflex precludes adequate coating. In the presence of large tumors causing stridor, coating of the inferior portion is often impossible, and the addition of foreign material on top of the mass may be dangerous, precipitating complete occlusion of the glottis and the need for an emergency tracheostomy. Allergy to the iodinated contrast material occurs, although quite rarely.

Tomograms of the larynx have the major disadvantage of requiring long exposures, which limits dynamic maneuvers. It is also done without visual control of positioning.

The air laryngogram is not a new method, but is, I believe, underused. Its obvious advantages include its simplicity and speed and total lack of discomfort or danger to the patient. It has already been reported to be as accurate as positive-contrast laryngography to show the subglottic area, and is more accurate to delineate the inferior margin of large transglottic lesions, which is most important to plan therapy. Lesions of the supraglottic areas (laryngeal ventricles, arytenoids, aryepiglottic folds, pyriform sinuses) are shown almost equally well by both methods and very small polypoid lesions have been shown by air laryngograms on the cords. Air laryngograms are slightly less satisfactory for some extremely small lesions in the laryngeal ventricles, although the inverse phonation is usually spectacularly effective in showing sharp details of the laryngeal ventricles, true cords, and false cords. Pooled secretions may cast confusing shadows in the bottom of the pyriform sinuses, but, again, this can usually be solved by good modified Valsalva maneuvers, or by laying the patient down. The base of the epiglottis, pre-epiglottic space, and anterior commissure are well shown on the lateral films. Phonation, Valsalva and modified Valsalva demonstrate the pliability of the epiglottis. Quiet breathing is best for the anterior commissure, since it relaxes the vocal cords' traction on it. The valleculae cannot be demonstrated on the frontal films.

Xerolaryngography offers promise, but is not widely available as yet.

CONCLUSION

In most cases, an air laryngogram performed with compulsive attention to density and positioning and use of the necessary maneuvers will provide a perfectly adequate examination of the entire larynx and will be of great help in planning direct laryngoscopic biopsies or radiotherapy. In some cases (large transglottic lesions) one may have to resort to positive-contrast laryngography. Most importantly, its accuracy is comparable to the positive contrast laryngogram in demonstrating the inferior margin of a subglottic lesion, the area of greatest concern to the ENT physician. In some selected instances, one may have to resort to positive-contrast laryngography and cine for more definitive information, particulary in cases of very small lesions located in the laryngeal ventricles, anterior commissure, pyriform sinuses, or arytenoids.

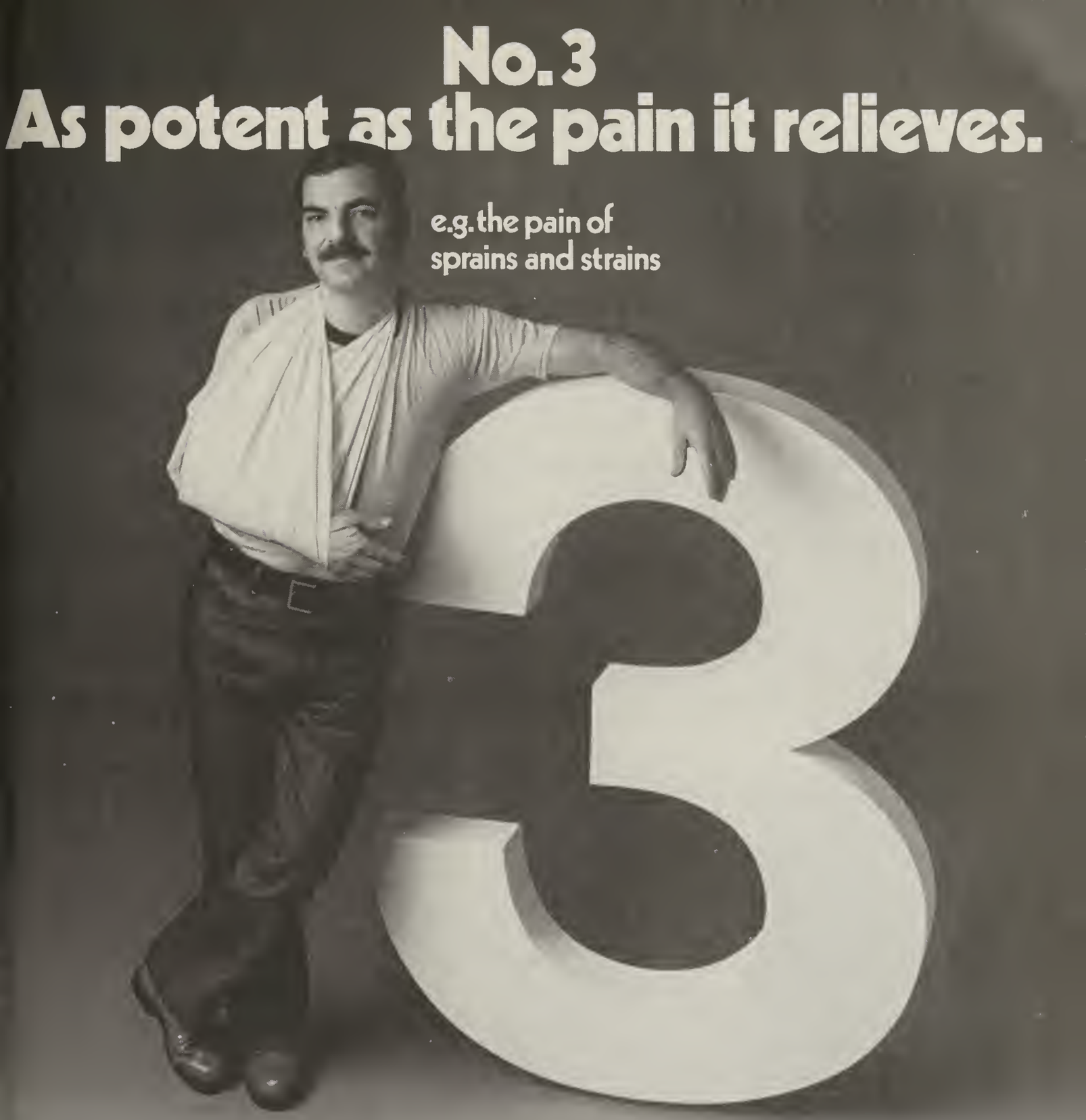
In view of its ease of performance, comfort to the patient and increased accuracy due to improvements in technique, I feel that the air laryngogram is a very effective alternative to the positive-contrast laryngography and deserves wider use.

BIBLIOGRAPHY

1. Maguire; Radiology 87:102, 1966
2. Thornbury and LaTourette; Amer J. Roentgenol. 99:555, 1967
3. Doust; Radiology 110:727, 1974.

No. 3
As potent as the pain it relieves.

e.g. the pain of
sprains and strains



NOT TOO LITTLE

- as potent as the pain you need to relieve in patients with fractures, sprains, strains, wounds, contusions, and the pain of surgical convalescence
- unlike acetaminophen/codeine combinations, it does not sacrifice anti-inflammatory action

NOT TOO MUCH

- potent—yet not excessive
- addiction liability low

NOT TOO EXPENSIVE

- brand-name quality, yet reasonable in cost
- readily available in both hospital and local pharmacies

CIII CONVENIENCE

- telephone Rx in most states, up to 5 refills in 6 months at your discretion (where state law permits)

EMPIRIN® COMPOUND WITH CODEINE NO. 3

codeine phosphate* (32.4 mg) gr ½
Each tablet also contains: aspirin gr 3½, phenacetin gr 2½, caffeine gr ½. *Warning—may be habit-forming

Wellcome

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Effectiveness across the spectrum of most common forms of insomnia

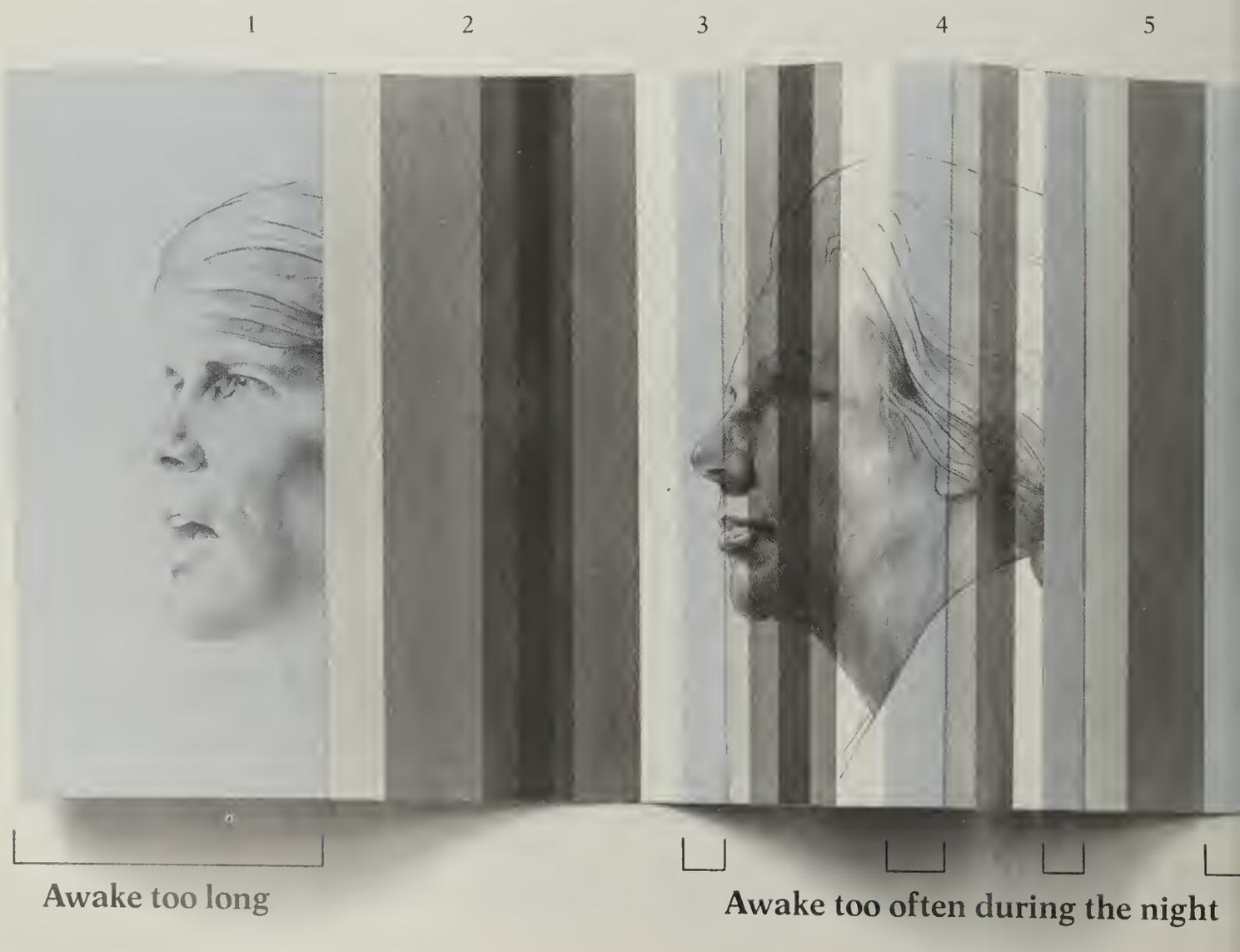
Awake too long, awake too often, awake too early...

These are the most common forms of insomnia, and may occur singly or in any combination. The night of troubled sleep depicted here comprises all three types. As the night progresses from left to right, each sleep stage is identifiable by its own shade of gray. Blue represents "Awake."

As you can see, this hypothetical "patient" takes well over an hour to fall asleep, awakens several times during the middle of the night and awakens too early in the morning.

Sleep Stages

- Awake
- REM
- Stage 1
- Stage 2
- Stage 3
- Stage 4



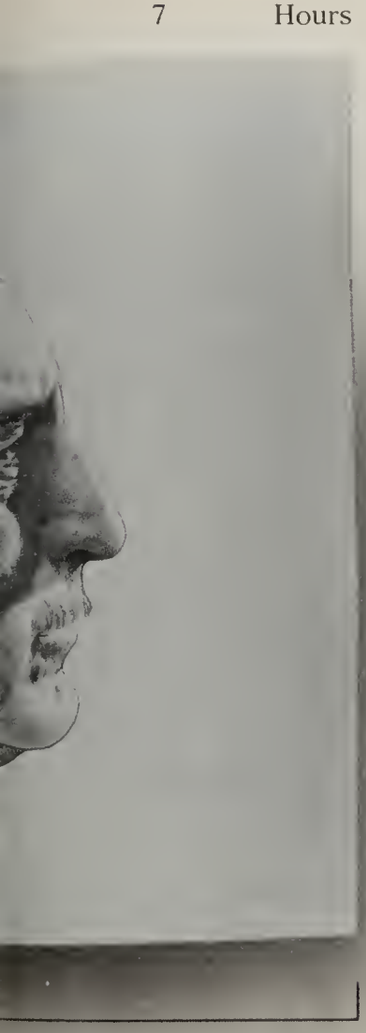
The insomnias most often occurring in young and older adults

For patients with trouble falling asleep (common in young adult insomnia patients), Dalmane (flurazepam HCl) 30 mg provides sleep within 17 minutes, on average. For those with trouble staying asleep or sleeping long enough (common in those over 50), Dalmane offers increased total sleep time with fewer nocturnal awakenings. These clinical results were demonstrated in studies conducted in four geographically separated sleep research laboratories.[1-4]

The relative safety of Dalmane (flurazepam HCl) is well documented

Dalmane (flurazepam HCl) is relatively safe and well tolerated; morning "hang-over" has been infrequent. The usual adult dosage is 30 mg; in elderly or debilitated patients, limit initial dosage to 15 mg to preclude over-sedation, dizziness or ataxia. Caution patients about possible combined effects with alcohol and other CNS depressants.

Broad-spectrum medication for the most common forms of insomnia



Awake too early



Dalmane®
(flurazepam HCl)

One 30-mg capsule *h.s.*— usual adult dosage
(15 mg may suffice in some patients).
One 15-mg capsule *h.s.*— initial dosage for elderly or debilitated patients.

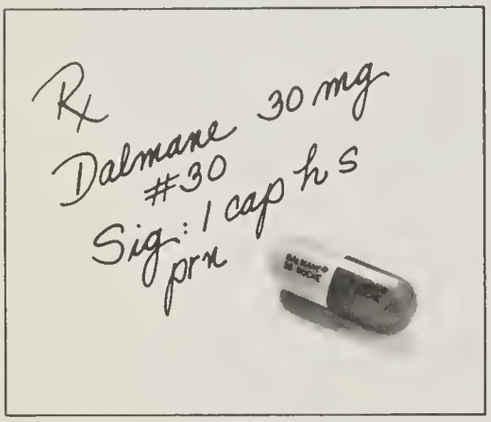
- ☐ induces sleep rapidly
- ☐ reduces nighttime awakenings
- ☐ lengthens total sleep time

ROCHE

Please see following page for a summary of complete product information.

Broad-spectrum medication for the most common forms of insomnia

Dalmane®
(flurazepam HCl) Ⓒ IV



Objectively proved in the sleep research laboratory, Dalmane

- induces sleep within 17 minutes, on average
- reduces nighttime awakenings
- provides 7 to 8 hours sleep, on average, without repeating dosage

Before prescribing Dalmane (flurazepam HCl), please consult complete product information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

Contraindications: Known hypersensitivity to flurazepam HCl.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity, have also been reported in rare instances.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

REFERENCES:

1. Karacan I, Williams RL, Smith JR: The sleep laboratory in the investigation of sleep and sleep disturbances. Scientific exhibit at the 124th annual meeting of the American Psychiatric Association, Washington DC, May 3-7, 1971

2. Frost JD Jr: A system for automatically analyzing sleep. Scientific exhibit at the 24th Clinical Convention of the American Medical Association, Boston, Nov 29-Dec 2, 1970; and at the 42nd annual scientific meeting of the Aerospace Medical Association, Houston, Apr 26-29, 1971

3. Vogel GW: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ

4. Dement WC: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ



ROCHE

ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

PREVENTIVE MEDICINE: WITHER GOETH THOU?



Some believe that preventive medicine, to the busy clinician, has lost its flavor or perhaps he rejects the general malaise of the specialty.

A short note, "Dr. Alice Evans, 94, Bacteriologist died September 5, in Alexandria, Virginia. A pioneer in her field, she helped establish raw milk as a cause of undulant fever in man and was a leading advocate for mandatory pasteurization in the United States". They might have added that she also acquired the disease during her laboratory investigations. While undulant fever no longer poses a major threat, at least here in the States, world wide it is far from under control, and her contributions in preventive medicine in relation to this disease is for the most part now unknown and unsung.

Dr. E. L. Wydner, an epidemiologist, puts it this way, "the United States has a $100 billion health care system which is no more than a disease care megalith. We doctors largely ignore the historical lesson that *no disease has ever been eliminated, except through prevention.* The insurance industry pays to get us well but not to keep us well. We are now moving closer to a supplementing existing health insurance with a national plan.

But there is one terrible flaw: Our programs are almost entirely designed for the person who is already struck by a disease. Little attention is paid to keeping us healthy."

He might have added that we spend many more billions for institutes devoted to the care of an organ such as the brain, heart, spinal cord, kidney, and surely there must be one for the magnanimous liver.

Commenting upon open heart surgery in children, Dr. Herbert Mark opines, "We offer open heart surgery to children born with a great diversity of congenital abnormalities. As the defect is repaired the child is doing well, the parents, the patient himself as he grows older and even the doctors may feel that there has been a cure. But it begins to look as if some of these patients have heart related problems later in life . . . the atrial septal defect, to take one example, is amenable to surgery at any age. But long post-operatively many patients show an enlarged heart shadow on the chest xray, and this must be considered a risk factor. In addition, there is a tendency to recurrent arrhythmias". Later in life, there is now a great interest almost a fad in supplying new vessels for old whether it is the heart, the belly or the extremities.

But what sort of a program, what sort of a medical preventive program have we devised, so that the people in their twenties can avoid these diabolical plugged vessels in the fifth, sixth and seventh decade of their terrestrial stay?

Editor's Page

EDITOR-IN-CHIEF
John W. Kennedy, M.D.*

ASSOCIATE EDITOR
William B. McGrath, M.D.*

EDITORIAL ASSISTANT
Joan Bruner

EXECUTIVE DIRECTOR AND MANAGING EDITOR
Bruce E. Robinson

EDITORIAL BOARD

Robert Barbee, M.D.
Marshall B. Block, M.D.
M. David Ben-Asher, M.D.
Andre J. Bruwer M.D.
Melvin L. Cohen, M.D.
Arthur V. Dudley, Jr., M.D.
Walter V. Edwards, Jr., M.D.*
C. Herbert Fredell, M.D.
Kenneth E. Johnson, M.D.
Gerold Kaplan, M.D.*
George Lastnick, M.D.*
Robert F. Lorenzen, M.D.
Darwin W. Neubauer, M.D.
Stanley H. Nordmo, M.D.*
David Pent, M.D.*
Donald A. Polson, M.D.
William F. Sheeley, M.D.
Michael L. Schreiber, M.D.*
Maurice L. Sievers, M.D.
Paul L. Singer, M.D.
Ernest Smith, M.D.
David C. H. Sun, M.D.*
Eleanor A. Waskow, M.D.
*Publishing Committee

On another tack, the teaching now is that vaccination for smallpox carries with it more jeopardy than longevity. Some of us can recall that in the short time since WW II there has been unrecognized epidemics, one in New York and another one in Scandinavia which caused the demise of ten to fifteen individuals before the disease could be recognized and vaccination of all contacts undertaken. A recent announcement by the World Health Organization suggests that smallpox will finally be eradicated within the next year. The two cesspools are still Bangledesch and Ethiopia. Let us hope that they are right but some of us doubt such an optimistic outcome in the centuries old battle, against this disease for which Jenner provided such a magnificent preventive program.

Some of us recall that with the advent of penicillin it was predicted that syphilis would at last be wiped out and no longer be a disease of prevalence. The present incidence of not only syphilis but of gonorrhea belies such an optimistic prediction.

We would therefore raise our small voice to encourage all of those who persist in the area of the first triumph of western medicine, preventive medicine, to continue their efforts. Those who repair worn out organs, may disagree, but they probably conserve very little of a community workforce, in comparison with the treasure needed to support their efforts.

JOHN W. KENNEDY, M.D., EDITOR

Dean's Page

THE OFFICE OF CONTINUING MEDICAL EDUCATION AND OUTREACH



NEAL A. VANSELOW, M.D.

On March 1, 1975, Dr. George Comerci was appointed Associate Dean for Continuing Medical Education and Outreach was activated. A permanent faculty Committee on Continuing Medical Education consisting of nine members of the voting faculty (six members from the Clinical Science faculty and three from the Basic Science faculty) is working with the Associate Dean. As a result of their combined efforts, a faculty bylaws change was made to specifically include activities in continuing medical education as part of their teaching duties, and as such, affect consideration for promotion and tenure. Furthermore, a recommendation was made that the Office of Continuing Medical Education and Outreach develop resources necessary for the initiation, coordination, integration and facilitation of continuing medical education activities for the College of Medicine faculty and the physicians of Arizona. These programs should be appropriate to the needs of Arizona physicians and available to them with consideration for the location of their practices within the state of Arizona. The Office was also asked to be active in the evaluation and documentation of continuing medical education activities provided by the faculty and the Office. The faculty of the College of Medicine recognizes its obligation to participate in continuing medical education activities. Presently, the faculty Committee is working with the Associate Dean for the establishment of policy relating to expectations of the faculty with regard to participation in continuing medical education activities. The Committee will continue to work with the Associate Dean on all matters relating to continuing medical education, including the planning, implementing and evaluating of continuing medical education programs.

The outreach component of the Office of Continuing Medical Education and Outreach deals with the development and coordination of

programs outside the College of Medicine that are necessary for the education of medical students and housestaff as well as practicing physicians. One of the benefits of the outreach activities will be to reinforce the concept of medical education as a continuum and one of life-long learning. The Office will provide a liaison between the University of Arizona College of Medicine and other Arizona biomedical and social agencies, professional and non-professional organizations, and health provider groups in order to be mutually beneficial to the physicians and citizens of Arizona.

The Office will serve as a resource for Arizona physicians with regard to available continuing medical education programs and will assist them in the design of programs to meet their individual needs within or outside the University of Arizona College of Medicine. The Office will strive to provide continuing medical education to physicians not only to satisfy the health needs of the individual citizen, but also to contribute to the dignity and worth of the individual physician as he works through life-long learning to fulfill his potential as a physician and to achieve self-actualization in all areas of his life.

Dr. Comerci, since his appointment as Director of the Office, has made numerous planning trips to Arizona communities. Our present arrangements have had College of Medicine faculty contributing their services at no cost to the community physicians, and in turn the community hospitals and/or physicians assuming responsibility for travel costs and expenses. Visits have been made and programs presented at many communities including the following: Benson, Bullhead City, Cottonwood, Holbrook, Kingman, Lake Havasu, Mesa, Mohave Valley, Nogales, Phoenix, Prescott, Safford, Sierra Vista, Wilcox and Yuma.

Currently, the Office is in the process of obtaining American Medical Association institutional continuing medical education accreditation for the Arizona Medical Center. There will be a site visit on March 26 & 27, 1976, which will coincide with a 3 1/2 day course entitled "Update: Primary Care, 1976" to be presented on March 24-27, 1976, at the College of Medicine in Tucson. This will be a course especially designed for updating primary care physicians and presented by the faculty of the University of Arizona College of Medicine.

Neal A. Vanselow

Clinical Oncology In Arizona

MANAGEMENT OF TESTICULAR CARCINOMA

THEODORE L. MOBLEY, M.D.
ROBERT H. THOENY, M.D.
DAVID KING, M.D.

Editors: Sydney E. Salmon, M.D., Professor and Head, Section of Hematology and Oncology, University of Arizona College of Medicine, Tucson, Arizona 85724; Robert H. Thoeny, M.D., Dir., Radiation Oncology, Good Samaritan Hospital, Phoenix, Arizona 85006; Darwin W. Neubauer, M.D., General Surgeon, 720 Country Club Road, Tucson, 85716.

INTRODUCTION

The optimal treatment for patients with carcinoma of the testicle remains an unsettled question. A number of factors contribute to this uncertainty including rarity of such tumors, variety of histologic categories, difficulties with accurate staging, and multiplicity of therapeutic approaches used without available well controlled prospective studies. Unlike seminoma with its well established high curability using orchiectomy followed by irradiation, testicular carcinomas as a group present a challenging problem for multidisciplinary management by surgeon, radiation therapist and medical oncologist.

HISTOPATHOLOGY

Over 95% of testicular tumors arise from the germinal epithelium. These have been conventionally divided into four basic histologic varieties: seminoma, embryonal carcinoma, terato-

From: Division of Oncology, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85062.

carcinoma, and choriocarcinoma, with various combinations of these pure types. Seminomas, which constitute about 40-50% of most series, are excluded from the present discussion.

STAGING

Generally accepted clinical staging of testicular neoplasms is as follows:

Stage I — Tumor limited to the testicle.

Stage II — Clinical or radiographic evidence of subdiaphragmatic tumor spread involving the the regional lymphatics and/or spermatic cord and scrotum.

Stage III — Supradiaphragmatic nodal disease or extra-lymphatic spread.

WORK-UP

The basic pattern of spread for these tumors is to regional lymphatics of the pelvis and para-aortic nodal region. Relatively early and more frequent extra-nodal hematologic metastasis occurs with testicular carcinoma as compared to seminoma. Clinical evaluation, therefore, should include complete history and physical examination with appropriate laboratory work including CBC, urinalysis, blood chemistry profile and chorionic gonadotropin levels. Bipedal lymphangiography constitutes the major staging procedure for evaluation of subdiaphragmatic regional lymph nodes along with the IVP and, on occasion, inferior vena cavography. Because of the propensity for hematologic metastases, chest x-ray with bilateral whole lung tomograms is advocated routinely along with liver and other scans as indicated.

THERAPEUTIC MANAGEMENT

A. Surgery: The surgical treatment of non-seminomatous testicular tumors is carried out in two stages. Stage one is an immediate high inguinal transection of the spermatic cord and orchiectomy. Biopsy of the testis is contraindicated as is any trans-scrotal procedure such as needle aspiration.

Stage two consists of a retroperitoneal lymphadenectomy. The approach to the retroperitoneum may be either through the peritoneal cavity (a midline approach usually) or through a thoracoabdominal approach. The latter incision is designed to give better exposure to the aorta and vena cava above the renal pedicle. The dissection is carried out inferiorly to the ipsilateral inguinal ring and the contralateral iliac bifurcation. All areolar tissue is removed between the renal pelves and from around the great vessels to the level described above. The inferior mesenteric artery is routinely sacrificed.

B. **Radiotherapy:** Potential subdiaphragmatic nodal metastases have been traditionally managed by either unilateral or bilateral retroperitoneal lymphadenectomy following initial orchiectomy.[1] Radiotherapy given post-operatively to the regional lymphatic drainage areas is of therapeutic value in patients with proven nodal metastases. Therapy is generally withheld in those patients with surgically negative nodes. Prophylactic irradiation of the mediastinal and supraclavicular nodes in Stage II patients has been questioned since these areas may be skipped by extra-nodal pulmonary and visceral metastases.[2]

The so-called "sandwich technique" of therapy for Stage I and II patients has been advocated by some.[3] This involves planned post-orchiectomy radiation therapy to the abdomino-pelvic lymph nodes to a dose of approximately 3000 rads in three to four weeks. After a three week rest interval, lymphadenectomy is carried out. Post-operatively, an additional 1500 to 2000 rads of radiation is given either routinely or limited to those with surgically positive nodes.

Several reported series from centers in Canada and England have demonstrated survival rates equal to or better than those following lymphadenectomy by employing radiation therapy alone.[4] In these institutions surgery has been reserved for removal of bulky residual tumor which responds incompletely to irradiation.

Current radiotherapy guidelines used in our Department are summarized below:

Clinical Stage I patients (negative lymphangiogram) undergo immediate staging lymphadenectomy with no further treatment in patients whose nodes are surgically negative. Those with positive nodes and Stage II patients (positive lymphangiogram) undergo postoperative irradiation.

Dosage levels approximate 5000 rads at midplane in six weeks given via parallel opposed fields on a 4 MeV linear accelerator. The ipsilateral pelvic and bilateral para-aortic lymph nodes are routinely treated from the level of the T-10 interspace to the obturator fossa. The

inguinal nodes and scrotum on the involved side are also irradiated with shielding of the uninvolved testicle in patients who have local tumor extension outside the testicle into the spermatic cord or in whom scrotal approach to the testicle was surgically employed. Bilateral pelvic node irradiation via inverted Y fields or whole abdomen treatment using either open fields or "moving strip technique" is employed when there is gross bulky tumor involvement low in the para-aortic and pelvic nodal areas because of the increased incidence of widespread abdominopelvic disease and cross-over nodal metastasis in the pelvis. These patients may also be considered for "sandwich technique" of sequential radiotherapy and surgery to facilitate tumor resection.

The use of radiotherapy alone in Stage II patients is an option currently under evaluation. Here, surgery is reserved for post-irradiation removal of residual disease which has been incompletely sterilized by therapy.

We do not advocate elective irradiation of the mediastinal and supraclavicular nodes in Stage II patients since this adds to morbidity without apparent increase in salvage rate. Stage III disease, either nodal or extra-lymphatic, is managed primarily by systemic chemotherapy. Local palliative radiation to symptomatic metastatic disease sites, however, is of value in conjunction with chemotherapy on an individualized basis. The role of radiation therapy in choriocarcinoma is basically limited to palliative management of local symptomatic disease because of the uniformly rapid fatal course of this tumor in the male.

The relatively high radiation dose required for treatment of testicular carcinoma as compared to seminoma results in commensurately increased radiation sequelae. Acute side effects include varying degrees of diarrhea, nausea, anorexia, sterility, leukopenia, and bladder irritation. These temporary symptoms abate over several weeks to months post treatment. Chronic or delayed sequelae from radiation include possible permanent sterilization (especially when portions of the scrotum must be included in the treatment field) and small bowel damage.

C. **Chemotherapy:** The basic modality of treatment of Stage III testicular tumors (excluding pure seminoma) is chemotherapy. There have been some striking advances in chemotherapy of this tumor in recent years. It now appears that the potential for at least long term control, if not cure, is present in a significant percentage of patients, even those with obviously widely disseminated disease.

The primary site of metastasis after mediastinal and supraclavicular node involvement is the lung, usually in the form of multiple pulmonary nodules. The liver is the next most common site of metastasis at this stage. Bone and brain metastases rarely occur and then only in the terminal phases of the disease.

The best chemotherapeutic results to date appear to be with the combination of Vinblastine and Bleomycin as developed by Samuels, et al.[5,6,7] Over a 4 1/2 year period 101 patients with Stage III testicular cancer were treated with these two drugs in one of three different treatment schedules. The overall response rate was 74% with a 41% *complete response* rate (disappearance of all evidence of tumor). Of the complete responders 8 have relapsed, 4 are living beyond 4 years and 7 beyond 3 years with no evidence of disease.

The best schedule of treatment to date is Vinblastine given in two doses over two days followed by a 5-day continuous Bleomycin infusion, given as a series of courses over a several month period. Of 40 patients treated with this program, 19 (47%) achieved a complete response.

It is to be noted that this form of chemotherapy requires hospitalization and is potentially quite toxic. Leukopenia and a paralytic ileus are regular sequelae of Vinblastine. Bleomycin pneumonitis is another potentially life threatening complication and deaths have occurred. Stomatitis, skin toxicity and transient icterus have also been noted. Because of the serious nature of these complications, this form of chemotherapy should be administered in a setting where there is experience with chemotherapy complications.

In summary, long term control and potential cure of disseminated (Stage III) testicular cancer is now possible in a significant percentage of patients although the chemotherapy required is associated with significant toxicity and should be administered by one experienced in cancer chemotherapy.

SUMMARY

Reported survival rates for testicular carcinomas are significantly lower when compared to seminoma regardless of stage with the possible exception of Stage I teratocarcinoma. The com-

bination of any of the testicular carcinomas with seminoma lowers the cure rate and choriocarcinoma carries a very poor prognosis indeed.

The foregoing discussion emphasizes the need for additional studies to more fully define the relative roles of surgery and irradiation in the optimal management of patients with early stage testicular carcinoma (Stages I and II). The use of prophylactic adjuvant systemic chemotherapy for these patients should also be investigated as a possible means of reducing the incidence of eventual extra-nodal failure. Chemotherapy, either alone or in combination with radiotherapy for patients with more advanced nodal disease (bulky Stage II and Stage III) and extra-nodal metastases, continues under investigation in attempts to maximize patient salvage.

REFERENCES

1. Maier, J.G., Sulak, M.H. Radiation Therapy in Malignant Testis Tumors. II. Carcinoma. Cancer 32: 1217-26, Nov. 1973.
2. Castro, Joseph R. Textbook of Radiotherapy by Gilbert Fletcher, M.D. Lea & Febiger, P. 737-51, Phil. 1973.
3. Earle, J.D., Bagshaw, M.A., Kaplan, H.S. Supervoltage Radiation Therapy of the Testicular Tumors. Am. J. Roentgenol 117: 653-61, March 1973.
4. Peckham, M.J., McElwain, T.J. Radiotherapy of Testicular Neoplasms. Proc R Soc Med 67: 300-3, April 1974.
5. Samuels, M.L., Johnson, D.E., & Holoye, P.Y., Continuous Intravenous Bleomycin Therapy with Vinblastine in Stage III Testicular Neoplasia. Cancer Chemotherapy Reports, 59: 563-570, 1975.
6. Samuels, M.L., Holoye, P.Y. & Johnson, D.E., Bleomycin Combination Chemotherapy in the Management of Testicular Neoplasia. Cancer, 36: 318-326, 1975.
7. Samuels, M.L., Johnson, D.E. & Holoye, P.Y., Bleomycin Combination Chemotherapy Programs in Stage III Testicular Neoplasia: Results in 101 Patients. Gann, Monograph 19, September, 1975.

Seminars in Endocrinology and Metabolism

HEAD AND NECK IRRADIATION: Its Role in the Production of Thyroid Gland Abnormalities Including Cancer

MARSHALL B. BLOCK, M.D.

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

MARSHALL B. BLOCK, M.D. **Editor**

Reprint requests to: 3411 North Fifth Avenue, Phoenix, Arizona 85013.

The wide use of radiation therapy in the treatment of benign disorders has been greatly curtailed because of the gradual awareness of the adverse effects of such therapy. The long lag between utilization and development of the significant side effects has created the unenviable situation of having to aware physicians, who have never used such therapy, of their possible side effects in patients treated many years earlier by other physicians who are no longer practicing medicine. Several recent attempts to circumvent this problem has taken place through the mass media. Highly publicized most recently has been the apparent association between the development of thyroid gland abnormalities including cancer and preceding treatment to the head and neck region with irradiation for tonsillar disease, enlarged thymus glands and acneform eruptions. Most of these therapies were utilized in the 1930's 1940's and 1950's. At those times such treatment was acceptable medical practice. Most of these treatments took place in hospital facilities al-

though office practice utilization of radiation therapy also was prevalent. Recently several studies have drawn attention to the high correlation between such treatment and throid cancer. Because of the magnitude of exposure, a review of these recent publications seems warranted and they will be summarized in the following paragraphs.

"Thyroid carcinoma and radiation, a Chicago endemic" was the title of a recent paper which appeared in the *Journal of the American Medical Association.*[1] This paper pointed out the increasing awareness of thyroid abnormalities developing many years after previous irradiation to the head and neck region. Drs. DeGroot and Paloyan, who compiled these patients from the population seeking treatment at the University of Chicago Thyroid Study Unit and Endocrine Clinics were impressed with the young age of all patients. Nearly all of the patients were 35 years of age or younger and on an average the thyroid gland abnormalities were detected 20 years after x-ray exposure. The tumors that were found were less invasive and never of the undifferentiated type. They found in their selected group of 23 patients that 2/3 of them who had a known history of x-ray exposure and had clinical thyroid abnormalities were found to have cancer. Based upon this limited retrospective study Drs. DeGroot and Paloyan suggested that patients who received significant x-ray exposure during childhood or adolescence should be examined for thyroid abnormalities. In a subsequent more extensive retrospective and prospective study undertaken again at the University of Chicago, Drs. Refetoff, DeGroot, and their associates, reported on 100 patients with a history of irradiation to the head and neck region.[2] All patients who had prior knowledge of a thyroid abnormality or who were previously screened by other physicians and referred to the University of Chicago, were excluded from this group. Their findings revealed that approximately equal numbers of men and women had abnormal findings on palpation of the thyroid gland. These constituted approximately 1/4 of the population examined. In 18 of these 26 patients, surgery was recommended. Fifteen underwent neck exploration. Seven of these 15 patients had carcinoma of the thyroid gland while eight had benign conditions. Localized carcinoma was found in one patient and invasion and/or metastases was found in five others. One patient could not be adequately staged. Thus, based on their experience, approximately 7% of patients with preceding irradiation were discovered to have thyroid gland cancer. Clinically the abnormalities detected on palpation included single nodules, multiple nodules, and diffusely enlarged glands with a granular surface. Histologically, one papillar, four mixed papillar-follicular and two follicular carcinomas were found. Of the benign condition, three had single nodules, one of which was associated with diffuse enlargement of the opposite lobe. Histologically the benign lesions included follicular adenomas, focal hyperplasia with cysts, colloid nodules Hertel's cell adenoma, and fetal adenoma. Five of the eight patients had multiple benign lesions. Interestingly, laboratory findings reference thyroid gland function revealed that six of the patients with palpable abnormalities had positive thyroid antibody titers. Only one had a level of thyroglobulin which was considered abnormal. These authors concluded that the high prevalence (7%) of carcinoma may be the result of careful examination of all patients in their reported series combined with an aggressive surgical approach. These authors estimated that at least 71,000 patients were treated, in the Chicago area alone, with irradiation to the head and neck region. Similarly other areas have also been shown to have had used similar modalities of therapy and with our modern modes of transportation and population mobility, it is not unreal to estimate the population at risk in the United States as being at least four to five times that of the Chicago area. Inasmuch as it has been shown to take at least 15 to 20 years for these thyroid glands to demonstrate such abnormalities, the authors concluded that "Irradiation associated thyroid carcinoma has not disappeared and physicians should be on the altert for this condition".

In summary, then, physicians caring for patients should be certain to inquire about preceding irradiation in the head and neck region for enlarged tonsils, thymus glands or acneform eruptions. Careful palpation of thyroid glands should be undertaken in these patients and if any doubt exists appropriate referral should be made. The young age of the population at risk seems to warrant such an approach.

REFERENCES

1. DeGroot, L, and Paloyan, E., Thyroid carcinoma and radiation, JAMA, 275:487, 1973.
2. Refetoff, S., et al, New Eng. J. Med., 292:171, 1975.

Editorial

MORE ON MALPRACTICE

DARWIN W. NEUBAUER, M.D.

Arizona Medicine supports Jack Brooks and his committee in the effort to alleviate the difficulties presented by professional liability insurance. This insurance coverage must be available at a figure that will permit the young man to enter practice, the active practitioner to meet his obligations and the retiring physician to continue to offer his experience in less active years. One cannot deny that cases develop where compensation to the patient is indicated. However, the public must be made aware that we cannot guarantee results. Certainly the mere fact of the existance of a debilitated patient in need of continued care does not mean that the physician because he once handled this case is responsible for the patient's continued social maintenance through the years.

In attempting to reach a just solution to this difficult problem, it is essential that we act in a united manner. There is room for a difference of opinion, in fact in the absence of an obvious correct solution, this difference is essential. However, it is not desirable for individuals to act seperately from this committee. Differing solutions should be presented for consideration by ArMA's committee on malpractice. Action must be coordinated and considered with those both elected and appointed to represent us in this trying problem.

INTEREST

WILLIAM B. McGRATH, M.D.

We tend to think in dichotomies, dual opposites: true-false, innocent-guilty, genuine-counterfeit, mental-physical.

There is another, more indefinite division. It is that between persons who are interested in visible things and those who are oriented more toward the invisible. The first devote themselves to surgery, for example, or to science or mechanics or gardening or architecture or archeology. The others are concerned with ideas.

Corollary is the (artificial) distinction between the doer and the thinker, the participant and the spectator. At the risk of cuteness one might speak of systolic and diastolic personalities.

A surgeon feels a hard lump in a patient's abdomen. A radiologist sees a shadow in the X-ray of a lung. A psychiatrist notes a kink in an individual's reasoning or a divergence in the course of his behavior.

Now at this point what professionals have in common is very, very important. Their primary reaction is: "This will be interesting."

The attitude implied in the word, interesting, is emotionally non-judgemental. It excludes the projections and dichotomies of good or bad, right or wrong, wise or foolish. Interest may be intense and absorbing but it is blessedly neutral.

I have an old friend. What we have in common seems to be our antipathies. To itemize them you had as well pull out the yellow pages of the telephone directory. He and I are upset and angrily disparaging toward everything from modern art to the selling of beer at the zoo. We are a couple bawling infants sitting on an anthill of irritations.

I have another friend, a younger man who returned from Viet Nam. Asked about the experience, he replied: "It was interesting." Do you appreciate the wisdom of his answer?

Most of us are emotionally for or against a thousand things about which we know very little or which are none of our concern. The sour habit of fault finding and blaming—and therefore expecting to be blamed— keeps us nervous and unhappy.

This television program or that book or such and such a theory might be sufficiently interesting to hold our attention, or it might not. When we learn to evaluate most things and most persons by that one calm criterion we will rise a bit above a world of unnecessary exasperations.

Happiness as a goal in life is will-o'-thewisp, slippery. We can lose it or fate can steal it from us. On the other hand a purely contemplative posture seems a little too passive for the churning occidental mind.

Wisest of all is to see to it that the world and its occupants engage our interest. Interest cannot be taken away from us.

Everyone has to trudge along wearily at times without love or appreciation or luxury or even hope. The most prevalent cause of depression is not the absence of happiness. It is the fact that people let their minds and their lives become so bleakly devoid of interest.

In this context, for example, the devaluation and neglect of the aged are often as much their fault as our own. Many older people have failed to become interesting and gentle by way of their long experience. They have become narrow and embittered. They take in little of interest from their environment and they are concerned mostly with what they put out in their stools.

Surely one would exchange pleasure or prestige or worldly possessions for some measure of equanimity. To cultivate interest as a main objective is perhaps what it means to become philosophical and to find some peace of mind.

Department of Health Services

EARLY AND PERIODIC SCREENING, DIAGNOSIS AND TREATMENT PROGRAM (EPSDT)



SUZANNE DANDOY, M.D.
ACTING DIRECTOR

Staff members of the Department's Medical Assistance Division, assisted by a number of advisory committees, have been preparing for the advent of Medicaid in Arizona of July 1, 1976. One aspect of the program which deserves the special attention of Arizona physicians is the Early and Periodic Screening, Diagnosis and Treatment Program (EPSDT).

A mandated part of medicaid, EPSDT is designed to provide preventive and early detection services to all children from birth to age 21 years who are eligible for Medicaid services in general. Unique to EPSDT is the obligation placed on the State to take the initiative in identifying these children, encouraging them to participate, and assuring that any abnormality detected by the screening process is resolved by medical diagnosis and, if indicated, by treatment

By present estimates, approximately 100,000 children in Arizona will qualify for EPSDT services. These children are distributed throughout the state with the largest numbers residing in Maricopa and Pima Counties. Many of these children are congregated in relatively accessible locations, but many others are scattered widely through the sparsely populated sections, and a large number reside on Indian Reservations. By federal Medicaid regulations, a meaningful attempt must be made to reach all of them.

To achieve success in reaching most of these 100,000 children, cooperation and participation by a variety of physicians, local health departments, public and private hospitals, and schools will be needed. In addition, necessary manpower to accomplish the program must include physicians, nurses, dentists, psychologists, social workers, nutritionists, as well as paraprofessional assistants and outreach personnel.

One method or model for providing EPSDT services is being pretested on a pilot basis in Phoenix. With support from a special federal grant and from the Concentrated Employment and Training Program, the Department's Bureau of Maternal and Child Health has begun a project designed to explore the feasibility of training and utilizing health aides to take a major part in assisting nurses and physicians. Following guidelines developed by ARMA's Maternal and Child Care Committee, these health assistants are being trained to conduct a screening interview in the home in order to identify possible problem areas for further investigation by the nurse and physician. They are also being trained to assist in screening clinics with height and weight measurements, blood and urine specimen collection, verification of immunization status, and similar tasks.

Following six to eight weeks of intensive training, the health assistants will receive practical experience under the supervision of a physician and a certified nurse practitioner in the Murphy School District in Southwest Phoenix. Any potential problems discovered in this screening program will be referred to existing resources for diagnosis and treatment, using the patterns of referral anticipated when Medicaid actually begins next July.

Effectiveness of the pilot program will be evaluated by several sources, including the physicians, nurses and educators who are part of the program itself. The training aspects will be reviewed by the Maricopa Community College District, which is placing a full-time nurse-educator with the project, and by the State Department of Education. Service aspects will be reviewed by the Maricopa County Department of Health Services, the Arizona Medical Association, and independent private physicians. Ultimately, the measure of program effectiveness will lie in the future performance of program trainees who will seek employment as health aides in the medical community.

Medicaid, and especially the EPSDT portion, has met with varying success in other states. Through the pilot project we hope to discover and correct shortcomings in advance, in order to provide the best possible health program for Arizona's children.

Radiology
Case of the Month

CASE NUMBER 6

TIM B. HUNTER, M.D.
ALAN C. WINFIELD, M.D.



Figure 1



Figure 2

An 18 year old male employee of a swimming pool cleaning service was working along a pool deck when he apparently slipped and fell into the pool. He is a non-swimmer and was underwater a short time prior to being rescued by a bystander. By the time he was picked up by the ambulance service he was breathing spontaneously but had no personal recall of any of the events which transpired from the time he fell into the pool until he reached the Yuma Regional Medical Center Emergency Room. At the time of admission he was alert and responsive but did have a moderate degree of dyspnea and slight hemoptysis. Physical exam revealed some dried blood in his mouth, fine rales over the left lung field and course breath sounds on the right. His pulse was 120, blood pressure normal and respiratory rate 30. Laboratory studies were mostly unremarkable except for a slight WBC elevation (12,800). His RBC count, hemoglobin and hematocrit were normal.

Figure 1 is the patient's admission chest radiograph. What abnormality, if any, is present? Figure 2 is a chest radiograph obtained 4 hours after admission. What abnormality is present?

FROM: Arizona Medical Center, Dept. of Radiology, Tucson, AZ 85724. (Dr. I.M. Fruendlich, and Dr. John C. Bjelland, Editors)

FRESH WATER NEAR DROWNING

DISCUSSION

The patient's admission chest radiograph shows a fine, subtle granular infiltrate most easily recognized in the right lung. The chest radiograph obtained 4 hours later demonstrates further pathology with the development of prominent bilateral basilar infiltrates. These radiographic changes are typical of fresh water near drowning.[1,2] Fortunately, near drowning is far more common than actual death at the accident scene. "Secondary drowning" is the occurence of death minutes to days after rescue and is a potential threat of some concern. It must be anticipated and adequately treated. In 1963, Fuller reported that 25% of patients in a series of 77 cases of near drowning died of subsequent secondary drowning.[3] The radiographic changes and basic pathology involved in near drowning are felt to result from pulmonary edema, the major cause of which is probably lung damage secondary to prolonged hypoxemia.[2] Aspiration of irritating foreign matter, such as gastric juice, and water aspiration may play varying lesser roles in the development of the edema. The chest radiograph will show either (a) perihilar or generalized pulmonary edema or (b) no findings.[1,2] In general, the degree of chest abnormality correlates well with the patient's clinical state. Those patients presenting with more severe radiographic changes will usually be more acutely ill and have a more prolonged hospital course or even expire. The patient's condition can worsen dramatically over a short period of time. The present case is an excellent example of worsening pulmonary edema several hours after the near drowning episode. With simple supportive therapy this patient's dyspnea disappeared and he was well enough for discharge the next morning. Ill patients may require vigorous treatment including respirator assisted breathing, administration of oxygen, corticosteroids and antibiotics.

The majority of near drowning patients are not ill enough to be admitted to the hospital and have normal chest radiographs.[1] This can be quite deceptive since there may be significant pulmonary injury without an abnormal chest radiograph.[1,3] Because of the unpredictable early course of near drowning and the ever present danger of secondary drowning, it is advisable to hospitalize and closely monitor those patients with any symptomatology or history of unconsciousness.[1] Once resolution has begun, radiographic findings often clear in a matter of hours and usually should be gone in a few days. Persistence or even worsening of radiographic change several days after the water accident usually means superimposed bacterial pneumonia.[1,2] Because it is postulated that most radiographic changes of fresh water near drowning are the result of pulmonary edema from hypoxic lung injury and not water aspiration, sea water near drownings probably produce a similar radiographic picture.[2]

REFERENCES

1. Hunter, T.B. and Whitehouse, W.M.: Fresh-Water near-drowning. Radiological aspects. Radiology 112: 51-56, 1974.
2. Rosenbaum, H.T., Thompson, W.L., and Fuller, R.H.: Radiographic pulmonary changes in near-drowning. Radiology 83: 306-312, 1964.
3. Fuller, R.H. The clinical pathology of human near-drowning. Proc. Roy. Soc. Med. 56: 33-38, 1963.

Seminars in Chest Medicine

ROBERT J. CLARK, M.D.
LYNN TAUSSIG, M.D.
WILLIAM C. WEESE, M.D.

WE ARE PLEASED TO INTRODUCE A NEW SECTION DEVOTED TO RESPIRATORY DISEASE. WE LOOK FORWARD TO TIMELY REVIEWS ON DEVELOPMENTS IN THIS FIELD.

Acute and chronic respiratory diseases account for a large portion of the illness we see in our medical community. They cause much morbidity and mortality and exert great economic pressures on society. In the past few decades, advances in the field of clinical chest medicine have made it possible to define, detect and treat many of these chronic diseases. Concurrent investigation in clinical and basic research laboratories has afforded us with a better understanding of their epidemiology, pathophysiology, diagnosis and prognosis.

The social and economic impact of these diseases is great. Days lost from work because of acute and chronic respiratory conditions are greater than all other disabling causes and are approximately equal to absences from all other causes combined. Respiratory diseases are responsible for 14 percent of all patient-doctor contacts. They account for approximately 55 percent of all acute conditions and 55 percent of all bed disability days from acute conditions (409 million days per year). At least 40 million persons suffer from chronic respiratory disease which limits the activity of 2.5 million persons. The high basic prevalance of respiratory disease coupled with the vast migration to Arizona of persons already predisposed or afflicted with these diseases places us a in a relatively unique position. In virtually every field of medicine a higher proportion of our patients will have either primary or concurrent pulmonary disease. The illnesses in question are asthma, emphysema, acute and chronic bronchitis, tuberculosis, cancer and, of course, coccidiodomycosis.

Although the smoking rate per capita has leveled off over the past 25 years, deaths from lung cancer and chronic obstructive pulmonary disease (COPD) are steadily increasing. Between 1960 and 1969, deaths from cancer of the lung increased over 60 percent; deaths from chronic bronchitis increased almost 85 percent and emphysema deaths rose by 150 percent. The reasons for this are not completely clear but one major factor is the long latent period between inhalant exposure and manifestation of disease. The incidence of asthma in Arizona is approximately 23 per 1,000 population yielding approximately 48,000 persons affected with this disease in the Phoenix area alone! Bronchitis, most prevalent in males in the fourth decade, has a staggering prevalence of 30 percent of the adult male population and 13 percent of all females; this in a relatively enlightened state where only 25 percent of the population smoke. Tuberculosis is far from extinct and has been increasing over the past few years. Four hundred newly diagnosed cases of tuberculosis were reported in Arizona in 1975. It therefore seems that, as physicians, it behooves us to be aware of the impact of respiratory disease on our community.

The newly appointed editors of this column will strive to keep all our readers abreast of clinical developments in the field of respiratory disease as well as disseminate practical information. Emphasis will be placed on early detection and treatment as well as preventive medical care and rehabilitation of the chronically ill patient. We would also encourage a dialogue between any of the readers of Arizona Medicine and the editors.

Topics Of Current Medical Interest

MEDICAL ETHICS: SOME USES, ABUSES AND LIMITATIONS

K. DANNER CLOUSER, PH.D.

A backlash against medical ethics may be developing because of a misunderstanding of its purpose and limitations. A primary role of medical ethics is to "structure" the disputed issues — i.e., by detailing the relevant principles and implications, analyzing the pivotal concepts, and focusing on the relevant facts. Medical ethics is limited by being unable to discriminate finely, so that a single line of action can seldom be determined by moral criteria alone. Underlying many criticisms of medical ethics is the failure to realize that medical ethics as such is not a reform movement or an effort to inspire moral behavior, that it is not and cannot be a specialist's body of esoteric knowledge, that it requires facts and conceptual analyses from other fields to do its work, and that value arguments can be carried farther than one generally expects. (N Engl J Med 293:384-387 1975)

New thrusts seem inevitably slated for backlash. New drugs, new procedures, new interpretations, new movements sooner or later experience re-think. Zeal is replaced by temperance, and blind commitment by cautious evaluation. Perhaps we too easily go overboard; perhaps the Hegelian Dialectic has fashioned our Being to its pendular patterns.

Medical ethics is no exception. One could always count on a midpoint backlash. On a one-year commission it would happen during June; in a week's conference it happens on Wednesday, and in a one-day consultation, it happens around noon. Suspecting that we are in the fifth year of a decade, I am in a stocktaking frame of mind. I have neither inclination nor talent to tackle the recent history, purpose, and track-record of medical ethics, but in a much more limited way I might initiate some reflection on medical ethics—at least enough to defuse some fears, articulate some nagging doubts, and generally to assess the possibilities and limitations. This is probably not an important enterprise, but, like spring housecleaning, it should be done every now and they just to remind us what is really underneath it all.

When backlash strikes, it is on several levels, emotional and conceptual: haughty attitudes are despaired of; intrusions into medicine by outsiders become annoying; and the difficult language and conceptual gymnastics of ethicists are seen as purposeful obfuscation.

In case your own gentle spirits would preclude having angry or questioning thoughts—hear what some others are saying:

A recent letter to the New England Journal of Medicine began: "I am increasingly distrubed by the creeping encroachment of people and agencies concerned about medical ethics . . . as they affect medical practice and scientific investigation, and wonder whether the time has not come for medical practitioners and biomedical scientists to assert their views more strongly . . ."[1] A physician writing in a recent issue of the *Hastings Center Report* says: "I must say that, from the view of the practicing physician, most of the conversations I have had with ethicists have tended to anger me, producing a deep feeling of frustration."[2]

Last year Daniel Greenberg wrote a two-page comment in the *New England Journal of Medicine* entitled "Ethics and Nonsense." Its first paragraph read this way: "At the risk of appearing both dense and perverse, I timorously suggest that perhaps the most inflated non-issue currently absorbing time and energy in the health community and its governmental command posts is that loose amalgamation of anxieties and passions that comes under the banner of medical ethics."[3]

These quotations give voice and authority to the uneasy qualms we all have concerning medical ethics—ethicists, doctors, and consumers alike.

I have no illusions about dealing satisfactorily with all the doubts and dilemmas that exist. More realistically, my aim is to make some basic points in a relatively organized way. My own ethical position would argue that there is a rational foundation for morality. Though that is

From: The Department of Humanities, College of Medicine, Milton S. Hershey Medical Center, Pennsylvania State University, Hershey, PA 17033, where reprint requests should be addressed to Dr. Clouser.
Supported in Part by a grant (EO-4579-71-197) from the National Endowment for the Humanities and in part by the Ohio Program in the Humanities.
Reprinted with permission from the author and New England Journal of Medicine, Vol 293, No. 8, pg. 384.

not at issue here, it may help the reader to put what follows into perspective.

I will first describe two roles of medical ethics. This will be followed by a description of two essential limitations. I will conclude with a series of complaints and responses.

MEDICAL ETHICS

Two Roles

To begin with, medical ethics is no big deal. The issues that it raises may be fascinating and important, but it is not as though medical ethics were a recent invention for discovering these intriguing issues or a special method for dealing with them. Medical ethics is simply ethics applied to a particular area of our lives—roughly the area touched by medicine. And being the same old ethics that has been around for a long time, medical ethics has no special principles or methods or rules. It is the "old ethics" trying to find its way around in new, very puzzling circumstances.

To consider the first role, the most obvious task being done by medical ethics is that of sensitizing. Everyone is getting in on this development, calling attention to myriad details of the biomedical world that have ethical implications. It is a consciousness-raising enterprise, alerting us to everything from grossest injustice to subtlest nuance. The majority of literature that has been labeled "medical ethics" does just that. It tends to be short on argument and long on description, anecdotes, and implications. Exposes of human experimentation, of lying to patients, or of refusing to grant patient requests would be examples.

The one thing to notice is that in this identifying of various phenomena as immoral—that is, as cases of needless suffering, or of injustice, or of deceit, or whatever—we are not calling on some special sense of morality, but only on the principles or moral rules that we ordinarily acknowledge in everyday life.

Furthermore, the reasoning about the medical-ethical issues proceeds much as is already familiar to you in everyday circumstances. What do you do? Suppose you genuinely wonder if a particular action is moral. If the action occurs in a context laden with many variables, pressures and causal chains, you try to sort out all the strands of argument, and all the contingent conditions, ". . . if I do this, he will do that . . . on the other hand, if the conditions of the County home were better I would choose differently . . . unless, of course, the neighbor were to decide to . . ." You figure out the implications of the action with the best probabilities you can—who will be hurt, how badly, which moral rules will be broken, and who will benefit. And ultimately you try to balance all this out, to determine the best action or the least immoral action you can do in the circumstances.

That is just what the professional ethicist does. This is the second item I would isolate in describing what medical ethics is up to. I would call this "structuring" the issues. The morally relevant strands of a complex situation are teased out.

Several things are involved in this structuring. One is spelling out the variety of conflicting ethical principles that are usually involved in any given situation. For example, in experimentation on human beings many have felt an over-riding obligation to help mankind through their discoveries, but this impulse is in sharp conflict with our moral obligations not to deceive subjects. Then, one must question the validity of each principle or see if there is a higher principle that might resolve the conflict.

Another aspect of this structuring is to isolate pivotal concepts that need clarification, definition, or defense. For example, is abortion killing the fetus or simply removing the pregnancy? Is not-treating the same as killing? What results from interpreting it one way or the other? What arguments are there for interpreting one way or the other? What constitutes being a person? Fetuses, the severely retarded, the senile—are they persons, and do they have certain rights? If yes, then such and such follows; if no, then something else follows. And so on. These are the strands of argument an ethicist must spell out, or "structure."

"Structuring" the issues is an analytic dissection. It is a road map of the issue, showing routes, relations, functions, shortcuts, and central and peripheral locations. It shows where various arguments and actions lead, what facts would be relevant, what concepts are crucial, and what moral principles are at issue and probably in conflict. This discovery and delineation of the issues is perhaps the central contribution of medical ethics.

Notice that structuring in itself does not necessarily mean making a decision on what to do in the situation. It simply lays out the issues, bringing the hidden problems and principles to the surface. This process may involve helping us

to dig down through layers of culturation, habit, and verbal debris, to rediscover with clarity our moral purpose and rationale. Notice also that what the professional ethicist does is not different in kind from what we all do in deliberating about a moral issue. This point is important. It is counter to the nature of morality that it be an esoteric body of knowledge that only a few specialists can really comprehend. The medical ethicist cannot be appealing to special theories and remote lines of reasoning and simply delivering his conclusions to us, which we must accept because he is the expert. (It is that kind of reliance on "experts" that got us into trouble in the first place!) Rational people must be able to see, follow, and judge the points made. Morality, to do its job of harmonizing our lives together, must be generally understood by all.

Two Limitations

Without a doubt we are all constantly being guided by moral considerations. We should not allow our conceptual struggle over the very difficult cases to hide the fact that moral deliberations give clear and unambiguous direction in most of our daily dealings.

Nevertheless, a serious limitation of ethics of which we should be aware is that ethics is a fairly blunt instrument: it does not cut finely. It can be precise and rigorous, but it does not determine one and only one action that receives the moral seal of approval. Certain alternatives may be ruled out, but a range of possible actions may remain as morally acceptable. So the field really is not narrowed down much by moral criteria, and frequently the decision is ultimately made on the basis of some belief, predilection, or matter of taste. These often pose as moral determinants, but they are not. In a given situation there may be many possible actions that do not break any moral rule, and hence all would be morally acceptable. But more frequently, I suppose, all the possible actions infringe on one moral rule or another, in which case it is a matter of choosing what one regards as the lesser evil. But equally moral persons can disagree on that. It must be admitted that it is on this level that many a so-called "ethical" debate focuses, whereas what is really the case is that the alternatives are equally moral, and that in truth they are debating either their personal preferences or matters of empirical fact, such as which way will put more people at risk, or which way will lessen the amount of suffering, or whatever.

As one example of this limitation, consider a situation in which the gene pool becomes more polluted and the incidence of genetic disease rises dramatically. One person might choose to deny the right of certain people to have children because of the great increase in risk of inflicting suffering on the children who will be born. Another person might put great value on the right to have children, arguing that that right outweighs any of the pain and suffering that would result. Equally rational moral persons might disagree on this point. They are really disagreeing about the relative importance of the moral rules to be broken. One thinks rights are more important than high risk of suffering; the other thinks the "mere" right to procreate is no big deal but rather that elimination of suffering is more critical.

Also consider a debate over voluntary euthanasia. One person argues that the right to self-determination is basic to all our rights. Another argues that in view of the inevitable misuse of euthanasia to do in people who do not really want to die, or doing in oneself for insufficient reasons (say, sheer depression), the possibility of injustice outweighs the right to be helped to die. These are equally moral alternatives, both endorsed by the rather blunt instrument of ethics. The issue must be decided on other than ethical grounds, and usually consists in convincing one's opponent that weighing this right or that result in the long run have more desirable consequences. But determining what consequences will result or how desirable they will be is often and empirical matter and in the absence of the relevant facts, it becomes guesswork. That an argument is empirical, not moral, makes it no less important, but it does tell us that moral criteria are no longer relevant to the argument. Medical ethics, in structuring the issue, should be giving us the topography of the argument, so we can go looking in the right places for the right things at the right point in the argument.

I have just discussed one limitation of medical ethics—that it does not cut very finely. The other limitation I will mention is that many of its key notions really must be referred to expertise outside of ethics (though I am reluctant to stress this kind of conceptual territoriality). Many of the pivotal notions on which ethical issues turn are themselves outside the domain of ethics. Some, such as "normal," "rational," "sick," "person," "competent," and "voluntary," need considerable conceptual analysis by a variety of special-

ties, whereas others are more empirical, such as which procedure involves what risks, the effects of certain drugs on judgment, the physiologic reactions of certain people to certain kinds of information, and so on. Sometimes the issue calls for both conceptual analysis and empirical study. For example, in wondering if mongoloid children have happy lives, we must get clear about what is meant by "satisfying" or "happy" or "meaningful" life, and then whether in fact they have it.

This limitation shows the critical importance of joint effort in these matters. Every one is needed, and each must listen to the other.

UNEASE AND ABUSES

With the very general description of medical ethics and its limitations behind us, we turn to a list of complaints. My purpose is to articulate some of the spoken and unspoken uneasiness with medical ethics, and to respond to them.

To begin with, there is the unease medical people very understandably might have with ethicists prowling around their domain. (One can see how medical ethicists might be seen as the invading barbarian tribes from the north, intruding on an old and venerable civilization populated and regulated by distinguished, knowledgeable physicians.) I see this unease taking several different forms. One is a fear of getting dogmatic pronouncements. Another is suspicion that the ethicist will spot only the superficial and obvious dimensions of the problem, missing all the nuances and subtleties, that constitute its really important aspects. And the third is that the physician is half fearful of being denounced by this underinformed, zealous outsider.

One answer to this question is to recall my insistence on the complexity of the issues, the need for judgment from a variety of experts and the necessity for the reasoning to be transparent to all. This is not to say that someone might not draw quick conclusions and shoot from the hip. But he would be totally misguided if he did. If the ethicist is doing his job properly, he is analyzing, clarifying, developing lines of reasoning, and trying it out on those who must work with these problems to see if he has misunderstood, overlooked important points or stated it too obtusely to be understood.

However, there is a more important distinction that it would be relevant to insist on here, the distinction between reformers and ethicists. Those fearful of ethicists are usually confusing them with reformers. They are not at all the same. Reformers are those who are primarily agents of change. If they see something they regard as clearly immoral, they zealously set about calling attention to it and trying to correct it. They are seldom ethicists as such. They are usually doctors, administrators, consumers, lawyers, and others.

Ethicists, on the other hand, tend to be interested only in the difficult, problematic cases in which what is right or wrong is by no means easy to see. Their interest is in picking through the thicket, trying this or that principle, following out this or that line of reasoning, exploring various concepts, interpretations, definitions, and perspectives. They grapple with an issue trying to help the medical world to see its way clear. It is not in their nature to issue oversimplified pronouncements. Indeed, I worry far more about their generating such a clutter of analyses and alternatives that a decision can never be made!

Another criticism one hears likens the medical ethicist to a medical specialist, and then complains that the ethicist is not much good on a seven-minute consultation because he does not deliver "the solution"! The ethicist might be able to structure the issues for you and perhaps rule out the obviously immoral, but, as we saw earlier, there are still a lot of decisions to be made, and they in turn have to do with how a variety of variables are interpreted and values weighted. The ethicist can help you uncover all the ingredients and sketch out a variety of alternatives and their justifications, but ultimately it is up to you to decide. That is why he must make his thinking clear for you to follow and understand, and why it is more of an educational matter than a consultation—more of a process than a pronouncement.

Ethicists have been heard to complain that whereas most specialist groups are fussy about credentials, everyone thinks he is an expert on ethics. Thus, a conference of medical ethics will have geneticists, surgeons, and internists freely speaking up, but an ethicist would not dare speak up at a medical conference. This is as it should be. Morality is in fact something that we all particpate in: it affects all of us, and it guides our actions. It is something we all must understand. It cannot be esoteric knowledge. And given my description of medical ethics, it needs a great deal of information on facts, concepts, and their implications from the medical sciences. So they very properly particpate.

They are, of course, areas of ethics in which anyone but professional ethicists might fear to tread—matters concerning theories and foundations of ethics. And like any professional group they have their own vocabulary, strategies, methods and maneuvers, but, nevertheless, when they are dealing in applied ethics of a particular realm, they must work for the participation, understanding and concurrence of the practitioners of that realm.

Turning a medical ethicist into a reformer and specialty consultant is not the only injustice that can be done him. Some try to saddle him with the task of inspiring others to be moral, as though it were his job either to motivate people to be moral or to invent a theory of ethics contrived somehow to stimulate people to be moral. This effort, of course, is a perversion. He is more an analyst than a preacher, more a diagnostician than a therapist, more a scholar than an essayist. The ethicist can only assume that you want to do the moral thing but that you are just not sure in a complicated situation what that would be. It is not his job as ethicist to make you want to be moral.

Some criticize medical ethics for dealing only with the so-called glamorous issues—abortion, euthanasia, human experimentation, genetic engineering, psychosurgery, and so on. Rather, say these critics, they should be helping with the day-to-day issues of medicine, those daily dealings between doctor and doctor, doctor and patient, doctor and staff, etc. In part I agree with this criticism, but at the same time I would issue a warning. This area of concern seems particularly susceptible to the limitation of ethics that I earlier emphasized—namely, that ethics does not cut finely. And pushing it to do so leads to confusion and contrivance. For example, suppose the issue is whether a doctor should come without question whenever and wherever a patient needs him, or perhaps whether doctors may refuse to work more than 60 hours a week. We can squeeze ethical principles and theories of obligations to derive every subtle drop of implication, but my bet is that on most of these issues it would be no help. What we need instead are simply rational social arrangements that will settle these issues by common agreement. Ethics, of course, would give us broad guidelines (e.g., we cannot have deceit, broken promises, or loss of confidentiality), and ethics would generally suggest a fair procedure for reaching such agreement. But for the most part we must work out these arrangements among ourselves by tradeoffs, compromises, convincing argument, or whatever, so that the interests of all of us will be served so far as possible.

Another misuse of medical ethics is to expect it to be everything that is nonmedical. This is to burden it with expectations it could not possibly fulfill. It would make it such a potpourri of methods, aims and subject matter as to be worthless. A physician's article on the nature of medical ethics lists a number of areas with which he thinks ethicists should deal—among them are interchange with the dying patient and his family, definition of death, premedical and medical-school curriculum, problems in the clinical training of physicians, public education concerning diseases, and rising costs of hospital care.[2] A program like that could turn fine minds to jello and return medical ethics to the stone age.

The last criticism I will mention we usually hear stated this way: it is just a matter of his values against mine; when it comes to these matters anyone's opinion is just as good as anyone else's.

It of course borders on madness even to raise this issue. It applies not just to medical ethics, but to all ethics, and indeed to anything concerning values. Furthermore, volumes could be written in response. However, I will meekly go to the other extreme, using the occasion summarily to make two points.

The first is that we generally quit the discussion of values long before we have exhausted meaningful argument. We are too quick to say, "You have your values and I have mine." Further discussion can elicit much more agreement either by pursuing the consistency of the value in question with other values that you hold or in "unpacking" the meaning and empirical criteria underlying the value in question. Persistent pursuit of each other's values with "why" questions will elicit a lot of hidden assumptions and reasoning, and consequently more agreement than we would initially expect. In short, I think values can be meaningfully argued—at least up to a point.

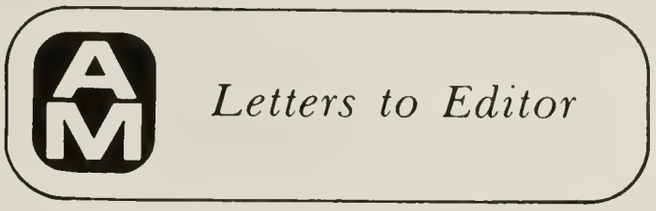
Secondly, ethics very roughly is concerned with the rules or principles that would harmonize the aims and desires of all men, by allowing those of each man to be realized so far as it would be compatible with a similar

in the sense that it tries to discover, examine, justify and apply such rules and principles. There are better ways and worse ways to accomplish this harmonizing task. Hence, there are better reasons for some moves than for others, and there are ways of showing that they are better. It is not just one groundless opinion. Argument, facts, and good reasons are very much to the point. The object of ethics is a harmonious and just society, and that is a matter for careful reasoning; one opinion is simply not as useful to that end as any other opinion.

These last two points are declarations and not arguments. But declarations, being less tedious than arguments, provide a smoother exit from an overly long editorial comment.

REFERENCES

1. Hepner GW: Ethics of human experimentation. N Engl J Med 292:321-322, 1975.
2. Moore C: This is medical ethics? Hastings Cent Rep 4:1-3,1974
3. Greenberg DS: Ethics and nonsense. N Engl J Med 290:97-978, 1974.



Dr. John W. Kennedy
Editor and Chief
Arizona Medicine
Dear Dr. Kennedy:

I enjoyed much the reading of your article entitled "Ethics, the Science of Moral Duty and Conduct", which was published in Arizona Medicine in November of 1975.

I also noted that the attorney you quote, has also had a number of things to say about physicians, indicating that their responsibility was to always testify when they were asked, and if it was not to so be carried out, that they would make it possible for the so called professional experts to make it difficult in terms of malpractice and the physician.

I therefore thought it would be appropriate, to send to you, a copy which I took out of Legal Medicine during the past month. I am sure that it would be most appropriate for our journal. Cordially yours,

Cordially yours,
M. K. Newman, M.D.

The Untold Story of the Good Samaritan

(A Malpractice Suit Does Him In)

A CERTAIN MAN went down from Jerusalem to Jericho and fell among thieves, which stripped him of his raiment, and wounded him, and departed, leaving him half dead.

"And by chance there came down a certain priest that way: And when he saw him he passed by on the other side.

"And likewise a Levite, when he was at the place, came and looked on him, and passed by on the other side.

"But a certain Samaritan, as he journeyed came where he was: And when he saw him, he had compassion on him,

"And went to him, and bound up his wounds, pouring in oil and wine, and set him on his own beast, and brought him to an inn, and took care of him.

"And on the morrow when he departed, he took out two pence, and give them to the host, and said unto him, 'Take care of him; and whatsoever thou spendest more, when I come again, I will repay thee.' "[1]

Now when the Samaritan was departed, the man became sorely sick, perchance because of the oil and wine that was poured into his wounds, and he appeared to be nigh unto death. Howbeit by the morrow he was much better.

And one came in unto him and said, "I am a man schooled in the interpretation of the law, and have heard how the Samaritan poured oil and wine into thy wounds and brought thee to this place and thou becamest sick. I have also heard of this Samaritan, how he has been blessed and has many flocks and herds and great riches and many servants. I pray thee let us go before the judge, and perchance he shall cause the Samaritan to recompence thee for thy sickness and misfortune."

And the man said unto him, "This is a hard thi thou asketh me to do. For had not the Samaritan stopped and helped me, I most surely would have died; doth not the scripture say to do unto others as thou wouldst have them do unto

thee? Also I have nothing wherewith to pay thee for thy service."

And the man of the law said unto him, "Worry not thyself with this matter, thou needest no money, for I will plead thy cause before the judge for a third of the substance the judge shall cause the Samaritan to give unto thee. And if the judge delight not in thee, thou owest me nothing." The man said, "I cannot do this thing." But after much persuasion, he consented.

And when they had gone before the judge, he caused the Samaritan to give unto the man, all his goods until he had naught, save the raiment which he wore.

Now the Samaritan's wife became sick and died because of the evil that had befallen them. And the Samaritan, being a man of many years, and having nothing wherewith to live, was forced to become a beggar at the gate of Samaria, and there died and was buried in the public field.

What think ye? Which of these men stands justified before God and his fellow man?

REFERENCE

1. St. Luke 10:30-35
Legal Medicine Nov. 1925

Book Review

In published reports for various tribes, biliary Symposium on Reconstruction of the Auricle. Vol. X, Editors Tanzar, Radford C., and Edgerton, Milton T.: C.B. Mosby Co., 1974 Pp/ 312, $42.00

This book represents the entire proceedings of a symposium on reconstruction of the auricle, held at the University of Virginia in Charlottesville on June 28 and 29, 1973. As such it represents the first time that this subject has been discussed in depth, including its many ramifications and variations.

The symposium, and therefore the book, was presented in three major parts. Part one was that of congenital deformities of the auricle with basic considerations, associated deformities, and growth of the normal and reconstructed auricles. Then followed a panel on the reconstruction of microtia, including the various modalities available, with the experience of several well known surgeons. Following this was the discussion of other forms or reconstruction.

A considerable discussion was presented on the management of the hearing losses that are almost always present to some degree in these cases.

The next general heading had to do with trauma of the ear, including burns, mechanical and operative trauma, with the reconstructions necessary.

The third basic division had to do with associated congenital facial deformities. This showed that microtia was just one element of a very broad facial deformity.

This book is probably the most complete tome of its type present in the Englishspeaking world. As such it will probably prove to be invaluable for some years to come for those interested in the subject. On the other hand, it will probably find a limited population because of the narrowness and specialization of the subject material.

Daniel B. Carroll, M.D.

The A.M.S.A. Report

INTRODUCING A.M.S.A.

— A Short Tale of the Phoenix in Tucson —
American Medical Students Association, Arizona Chapter, University of Arizona College of Medicine, Tucson, Arizona.

A.M.S.A. — nationwide organized medicine on the student level—each year methodically deluges students entering medical school with information regarding its activities and raison d'etre. Students each year somehow find its wiles resistable and go about the more immeidate business of basic sciences in medical school.

Blissfully ignorant of A.M.S.A.'s powerful machinations and opportunities, a group of students of the newly entered class of 1977 set about righting the wrongs of the world of medicine, were primarily concerned with maldistribution of medical manpower, and gradually developed an advisory group on Rural Health in conjunction with the Department of Family and Community Medicine at the University. This group afforded a continuing forum for discussion of what general problems faced the community at large, regarding availability of health care, what solutions were being sought, what ideas the students had based on both experience and conjecture—and developed an ever-increasing awareness of the realities of legislation on both the state and national levels regarding the future practice of medicine. This includes the Arizona Legislature's bill mandating public service as a requirement for licensure, and the Roy, Rogers and Kennedy bills in Congress asking for financial or public service paybacks after medical school in an effort to redistribute physicians (after the apparent failures of the A.M.A. and A.A.M.C. proposals of 1968 and 1971).

In early 1975, the local chapter of A.M.S.A. was functioning on a minimal level with occasional meetings of 2 or 3 students and intermittent exchanges of mail on an executive level with A.M.S.A. Headquarters in Chicago. The president of the organization had decided to give his efforts to more productive activities and left the future of Official Connection hanging in the balance. Official Connection was the last thing any of the students wanted—especially with organized medicine emerging as an apparent culprit in the irresponsibility of medical care over the years—but the thought of losing all the information, suspect as it was, faithfully distributed by the parent organization—was too much. A.M.S.A. was revitalized by both the core of the rural health students and by several others active in student government or interested in changes taking place today which would have an effect on the future practice of medicine.

It was agreed that A.M.S.A. would serve to distribute information—sunshine, it is said, is the best disinfectant—to the entire student body, for the body to dispose of as it pleased.

The ashes are no longer cold.

Kathy Reed
A.M.S.A. President
Class of 1977

ArMA Medical History

THE NAVAJO NATION HEALTH FOUNDATION: THE SEQUEL TO SALSBURY

In cooperation with the Arizona Hospital Association, we continue the series of historical sketches on Arizona Hospitals. It is planned to cover all the hospitals in the State. Your assistance in securing the data is earnestly requested.

—Editor

WALLACE J. MULLIGAN, M.D.
MEDICAL DIRECTOR

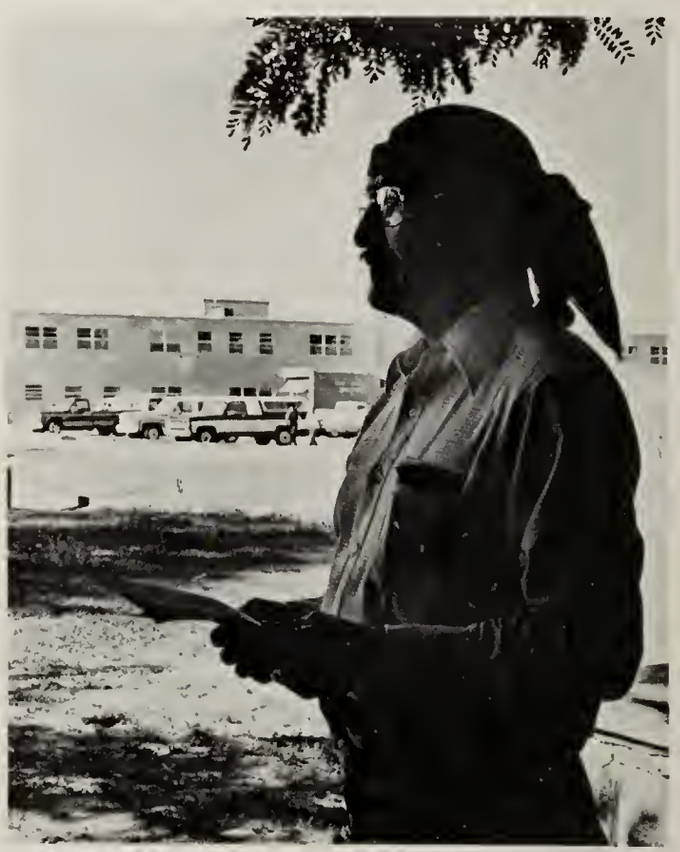
One is struck by the beauty of the area, the high mesas, the surrounding plains, and the immediate locale. Here, in an idyllic setting, are tree lined streets, the beautiful setting of a college campus, and a hospital. It is Ganado, Arizona, the perpetual testimony to Clarence Salsbury, "The Sagebrush Surgeon" (see Arizona Medicine, May, 1972).

The hospital, its clinics and its operation exist today in this historic hamlet as the Navajo Nation Health Foundation, the nation's first and only comprehensive health care program run by American Indians. It is only fitting that this historic venture should have been initiated in the famous Arizona village where Navajo and Anglo pasts have blended in tradition. Named for the famous Navajo leader, Ganado Mucho, the



Morning X-Ray Conference.

Doctor Mulligan is the Medical Director at the Navajo Nation Health Foundation and an Associate Professor of Family Medicine at the Colle of Medicine, University of Arizona — Tucson, AZ.



Reverend Allen Hill, Director of the Ganado Alcoholism Program, with Sage Memorial Hospital in the background.

village is the site of the nationally famous trading post founded by Lorenzo Hubbell, and the school and hospital brought to national prominence by Dr. Salsbury.

By the time of Dr. Salsbury's departure in the early 1950's, the health needs of the Navajo reservation were being addressed by the U.S. Public Health Service and within several years the multidisciplinary services of hospitals at Shiprock, Winslow, Tuba City, Fort Defiance and Gallup were a reality. But in Ganado, Sage Memorial Hospital continued to serve the local area and the Presbyterian Church continued its traditional support role, financial and medical. Poncel Hall, the hospital built by Dr. Salsbury, and the school of nursing established by him had gone different routes. The nursing school was not able to be continued and Poncel Hall was being used for clinics, housing, and administrative offices. A new modern hospital for surgery, obstetrics, medicine, and pediatrics was built in 1962 and included 45 hospital beds, an out-patient clinic, small x-ray, laboratory, pharmacy, operating suites, and medical records room. Sage Memorial Hospital was continuing its historical role, albeit on a smaller scale.

By 1969, change was in the wind. The People-to-People Health Foundation assumed the responsibility of the hospital and Project HOPE began its role of interim care. Outlying clinics were established in Wide Ruins, Nazlini and Ganado. Nurse practitioners, Navajo, Hopi and anglo, were soon making the daily hazardous drive to remote areas. From the community, young men and women were trained as home health aids, nicknamed DDN's (an abbreviation of a Navajo word so long it confuses even the Navajos) and soon HOPE physicians, nurses, nurse practitioners and DDN's were familiar sights, in the hospital, in the clinics, on the highways and stuck in the mud in remote parts of the Reservation.

But of even greater importance was the assumption of responsible roles by native Americans, in position such as the director of the laboratory, the head of medical records, the head of housekeeping, and even the hospital administrator; and of still larger significance was the election from the surrounding communities of citizens to determine the policies of the foundation; indeed, the first Indian hospital board grew



Nurse Practitioner, Kate O'Meara conducts well child examination in an outlying clinic.

from the community's concern that the hospital be continued and that they, the citizens served, should determine hospital policy; nor was this to be a perfunctory advisory board; instead, this group of citizens plus certain prominent Navajo leaders in the health field were trained to assume two simultaneous pioneer responsibilities: true self determination and actual health care responsibilities: true self determination and actual health care responsibility in an environment that combined Navajo and anglo medicine.

By July 1974, the undertaking began in earnest, and Project HOPE departed and The Navajo Nation Health Foundation became a reality.

It would be an understatement to say that since then the course has been rough; during the ensuing months, crises followed crises, and a projected budget deficit of a quarter of a million dollars threatened the very existence of the new project. With, at times, three physicians, and five



Kay Wauneka former nurse for Doctor Salisbury, now works daily as a nurse practitioner in the Sage Outpatient Department.



Dressing changes are part of morning rounds.

nurses, the system became strained and it became necessary to close obstetrics, surgery, and the clinics at Nazlini and Ganado; hospital employees were paid for only 32 hours per week and 15 employees were laid off. Indeed, as attempts to gain aid were turned down by multiple foundations, the future looked dark.

Community response, on the other hand, was direct and decisive; chapters served by the hospital gave as much as $1000.00 from their meager budgets, and in a dramatic turn of events, the Navajo Tribal Council loaned several hundred thousand dollars to the fledgling foundation to continue its work. The day, for the time being, was saved.

Today at Sage the future is bright; the Indian Health Service continues its support, financial and professional; the obstetric service has reopened, a fee for service charge has been initiated in the out-patient department, and surgeons from Fort Defiance use the Sage operating service. The nation's first bilingual Navajo nurse, Miss Carmelita Sorrell, is in charge of the main floor; the first Navajo male nurse, Mr. Larry Roanhorse, is active on the staff; the medical staff includes four full time physicians including a board certified internist and pediatrician, both of whom are Associate Professors in the Department of Family Medicine at the University of Arizona School of Medicine. Medical students from the University of Arizona and around the country serve clerkships at Sage and nursing students from Navajo Community College, do clinical rotations at the hospital. Recent accreditations by the Joint Commission on Accreditation of Hospitals and the Arizona Department of Health Services have boosted the morale of the staff and the prestige of the board. Board members include Dr. Annie Wauneka, whose accomplishments in the health field are too numerous to count, Dr. Taylor McKenzie, the nation's first Navajo physician, and its gracious chairperson, Mrs. Violet Smith.

A visit to Sage today reveals a unique health care delivery system in operation; while an extensive history and physical is being done in one room, a Navajo ceremony may be conducted in the next; the attitude in that both are necessary and the people served continue an allegiance which justifies the care and compassion of the Navajo Nation Health Foundation.

It has been a long time since Clarence Salsbury agreed to serve at Ganado and established a hospital and a legend; it seems only fitting that today, the Navajo Nation Health Foundation should continue the high standards he established, and in his tradition, pioneer in new fields of health care and health education.

COLONIAL MEDICINE AND BENJAMIN FRANKLIN

HAYES W. CALDWELL, M.D.

You will be intrigued and entertained by this fascinating account of Franklin's medical times and his relationship to physicians and scientists of his times. Dr. Caldwell serves up a delightful medical bicentennial!

Starting a presentation on Benjamin Franklin during the Bicentennial years, this letter written to Jacques Barben Dubourg might serve as a suitable introduction to the man's wishes and our topic.

"Your observations on the causes of death, and the experiments which you propose for recalling to life those who appear to be killed by lightning, demonstrate equally your humanity. It appears that the doctrines of life and death in general are yet but little understood."

"A toad buried in sand will live, it is said, till the sand becomes petrified; and then, being enclosed in the stone, it may still live for we know not how many ages. I have seen an instance of common flies preserved in a manner somewhat similiar. They had been drowned in Madeira wine, apparently about the time when it was bottled in Virginia, to be sent hither (to London). At the opening of one of the bottles, at the house of a friend where I then was, three drowned flies fell into the first glass that was filled.* Having heard it remarked that drowned flies were capable of being revived by the rays of the sun, I proposed making the experiment upon these; they were therefore exposed to the sun upon a sieve, which had been employed to strain them out of the wine. In less than three hours, two of them began by degrees to recover life. They commenced by some convulsive motions of the thighs, and at length they raised themselves upon their legs, wiped their eyes with their fore feet, beat and brushed their wings with their hind feet, and soon after began to fly, finding themselves in Old England, without knowing how they came thither. The third continued lifeless till sunset, when, losing all hopes of him, he was thrown away."

"I wish it were possible, from this instance, to invent a method of embalming drowned persons, in such a manner that they may be recalled to life at any period, however distant; for having a very ardent desire to see and observe the state of America a hundred years hence, I should prefer to any ordinary death, the being immersed in a cask of Madeira wine, with a few friends, till that time, to be then recalled to life by the solar warmth of my dear country!

After this introductory letter by Franklin, we might review with interest one of the many fields to which Franklin contributed. At the same time we may, at times, refer to what has happened in these fields after Franklin.

Benjamin Franklin probably traveled more than any other Founding Father and with wide interests in many political and scientific fields, would make an interesting traveling companion in this century. His intelligent questions would challenge any host conducting the tour. Better than any Founding Father, he could be visualized boarding a modern jet airliner—with Thomas Jefferson three paces to the rear. Other less traveled Founding Fathers would have to be urged aboard for a flight over this country and to Europe. Our first ambassador for France would wish to have a seat on the first commercial flight of the Concorde from Paris to Washington. This would be his token demonstration of a shared friendship with an old ally in our Bicentennial year. Franklin would marvel at flying at 1350 mph., and catching occassional glimpses of the Atlantic ocean and the gulf stream that he mapped. In a Paris park he watched man's first baloon flight and made the classic remark about the unknown future of a new born child. Even the "mail packets" in his day required four to six weeks for the Atlantic passage. The service and food would please him, but the wine list might be a disappointment if it did not contain Madeira wine. Franklin would not be shocked with the feminine passenger styles. The low cut blouse would, maybe for him, be a disappointment. He has seen more exposure in Paris at the Courts of Marie Antoinette. At that time it was fashionable for the nipple and the areola to rouged and exposed in formal dress by the ladies. Likely the string bikini for beach wear would have turned him on with a strong current. Franklin, being a great swimmer, would have frequented the beaches today!

He was a man with many interests but few things interested him more than medicine. Franklin's letters have been gathered and are being published by the Yale Press. These published letters provide a record of his interest in doctors, medicine and health problems. These pages are gleanings from some of these published letters.

In a letter to Colden, 1745, he offers to publish his findings and theories about circulation forces in the heart and great vessels, while correctly challenging their validity. He offers to print it "at my own expense and risque". In the same letter he indicates an interest in publishing "an American Philosophical Miscellany, monthly or quarterly". He planned to start this publication as an individual—this would have been the first medical journal in America. In this letter he offers his friend some philosophical advice. "I am persuaded you think as I do, that he who removes a prejudice or error from our minds, contributes to their beauty; as he would do to that of our faces, who should clear them of a wart or a wen."

Adam Spencer, an English physician educated in Edinburgh, came to Boston and awakened his interest in experiments with electricity. Benjamin Franklin first met him in Boston, June '73. These interesting experiments pleased and surprised Franklin. He later purchased Spencer's equipment and this was apparently Franklin's introduction to the science field.

Following publication of many experiments with electricity, Benjamin Franklin was elected a member of the Royal Academy of England (1756) and was later awarded the Copsey medal. Honorary degrees were conferred by Oxford, Edinburgh and afterwards, in this country by Harvard, Yale and William and Mary. Because of his lifelong active interest in medicine and health, he was elected to the Royal Society of Paris and made an honorary member of the Medical College of London. He served also as a Governor of the London Hospital, 1768. His letters and publications records many experiments, including studying the effect of electric shock on animals. Fowl, including pigeons, turkeys and chickens, were used in his experiments. "Being a frugal man" he later attempted to resuscitate apparently dead birds after electric shocks. In a letter he described "A pullet struck dead" during experiments that "recovered by repeated blowing into his lungs". "The fowl, when set on the floor, ran head long against the wall and, on examination, appeared perfectly blind." He also records that a "Pigeon that was struck dead to appearance by the electric shock

recovered life, drooped about the yard several days, ate nothing, the crumbs were thrown to it, but declined and died." The blindness probably resulted from prolonged anoxemia (oxygen lack) before the resuscitation occured. Franklin wrote articles advising people about the hazards of lightning and the value of lightning rods. These publications provoked likely public discussions a many arguments. He recorded the interesting observation that it was difficult experimentally to kill a wet rat with electric currents because the current traveled on the wet surface to the ground, whereas the dry rat, when shocked, was promptly killed. The same explanation may apply to lightning deaths when trees or buildings, under which partially dry men or animals find shelter, are struck during a lightning rainstorm.

Electric shock, a very popular new science, was used by him and others to treat many diseases including strokes, convulsions and rheumatism. Shock therapy has been used in psychiatry to treat mental depression. In 1973, two hundred years after Franklin, the Albert and Mary Lasker Award was presented to investigators (Dr. Wm. B. Kouwenhoven and Paul Mzoll) for their studies in resuscitation for electric shock. Cardiac massage, correcting heart irregularities with electrical current and restarting cardiac arrests can trace their origin to Colonial American Medicine. Lung inflation resuscitation (Franklin's fowl), cardiac massage and electrical stimulations have saved many lives and is used today in hospital coronary care units and also by firemen and ambulance units. Mr. Kouwenhoven, like Franklin, was awarded the rare honorary M.D. degree for his work investigating resuscitation of cardiac "deaths".

The bifocal eye glasses invented by Benjamin Franklin are framed more expertly and fashionable today, but the principle is the same. The trifocal glasses and contact lens are new advancements. His letter describing their usefulness is entertaining; he said they allowed him "to eat his food and at the same time see a companion across the table without changing glasses". We may assume the appearance of his companion provided an early pleasant reward for this imaginative inventor.

In a letter to a friend he reports a case of Quinsey (throat abscess) as a patient that required surgeons "to open his windpipe and introduce a leaden pipe for him to breathe through. I fear he will not recover" — the patient died.

Another challenge that enlisted Franklin's inventiveness was the design of a flexible catheter constructed by a local silversmith to provide his brother relief from an obstructed bladder due to "a bladder stone". Modern urologists whould shudder at its use without sterization and aseptic technique to avoid bladder infections. Lubrication was provided by having the catheter covered with silk or dry gut; wet before its use. Bladder stones were diagnosed by the passage of an instrument earlier invented that made audible sounds when it struck the bladder stones—the instrument is, of course, a "sound".

Smallpox was the most hazardous and feared infectious disease both in the colonies and Europe during Franklin's lifetime. His second and only legitimate son, not inoculated, died as an infant with smallpox. Vaccination (not inoculation) as we know it was introduced by Edward Jenner six years after Franklin's death. Jenner publicized but did not discover that cowpox infection in milkmaids provided immunity for smallpox. He was confused about the mechanism of the immunity production. Vaccines prepared from attenuated, live or killed organisms today produce immunity in man of animals for many diseases. Inoculation in colonial times using the smallpox virus, was advocated by many lay people but few doctors and the cautions was with good reasons. Approximately 4% of the patients inoculated died with smallpox and secretion from the sores of these inoculated patients could spread virulent smallpox to family and others. Franklin wrote pamphlets and letters describing the inoculation technique and advising the benefits of smallpox inoculation. The technique of smallpox inoculation was simple. A "dry scab" or secretions from "a pustule was warmed and applied to a fresh incision". Franklin cautioned "there might be danger from my letter, if it should have been near an infected room". He recognized the hazard of this means of spreading the disease. Inoculations provided the individual immunity by producing, hopefully, a mild case of smallpox.

Benjamin Franklin remained a strong advocate of smallpox inoculations—His letter in 1752 summarizes this protection benefit: "In the five visitations of the smallpox we have had in twenty-two years, eight hundred people had been vaccinated and four died from vaccination—two others may have died but could have been infected before the inoculation. In the Philadelphia Christ Church Parish, smallpox and

consumption accounted for one half the deaths in 1751.

Some states passed laws governing inoculation. Virginia's law required "A consent of the majority of the housekeepers within two miles was required" and the inoculated individual was forbidden to leave the house. Inoculation was considered a serious operation. Thomas Jefferson traveled from his home in Virginia to Philadelphia to be inoculated for smallpox. Smallpox epidemics at that time were fatal in thirty to forty percent of the patients and those who survived were often badly scarred.

Smallpox was reportedly used as an early form of germ warfare. During the Revolutionary War and the Canadian invasion attempt, General Carlton, a Canadian leader, supposedly sent patients with smallpox into the American invading army. The infection spread rapidly among the colonial soldiers and reportedly played a decisive role in the expedition's defeat. Whole regiments came down with smallpox with devastating results. This catastrophe provoked one of the early congressional committee investigations.

In a letter to his sister, Franklin reports the death of eight members of a family and their slaves within one week—in this sad story, "quick silver was used to cure the Itch" and was applied without medical advice.

Smallpox was declared eradicated from the Americas in November of 1973. The last case was reported in Brazil in 1971. It still is a problem in some countries. More than 130,000 cases with a twenty percent fatality rate has been reported in India. A ten year timetable to eradicate the disease has been set by the World Health Organization.

Another colonial medicine problem, current today, is lead poisoning. Franklin, in a widely circulated pamphlet and letters, while living in England and Philadelphia, wrote about lead poisoning occuring among tradesmen. He specifically mentioned "glazers, type setters, plumbers, potters and painters", He also associated the lead in stills or worms (coils) of stills as a cause of "drybellyach" a common complaint of lead poisoning. New England, Franklin reported, has "severe laws against the use of lead in distillery worms". He suggested distillary "worms" should be made of pure tin but they often were made of pewter, "which has a great mixture of lead". Lead poisoning remains a public health problem still in children and adults in New England and other parts of the United States. The current lead source is paints and industrial fumes. In colonial medicine the diagnosis was based on clinical manifestations. Today body fluid analysis accurately measures lead poison.

Pleurisy at that time was treated with "ten ounces of blood taken from the arm of the well side" (if pleurisy was on the right, the blood was drawn from the left) "or from the foot if both sides are affected and every six hours a tincture made from rattlesnake's root is taken orally. This root was used by the Indians to cure the bite of a rattlesnake". The blood letting was repeated the second day if the patient was not better. Such treatment certainly would encourage patients to deny not feeling better.

Franklin advocated instead of a cold bath for a tonic, bathing in cold air. He describes rising early in the morning to sit nude in his room reading and writing for one half to one hour "according to the season". Sometimes before dressing "I supplement my nights rest" with one or two hours sleep before dressing.

Franklin's letters and publications contain descriptions of other diseases. Yellow fever (possibly viral hepatitis) cancer, gout, asthma, colds and scurvy. Limited fresh food during the long travel time between the two continents, often requiring four to six weeks, increased the incidence of scurvy. Franklin was aware of the value of lemons in preventing scurvy. In 1764, he published an account of *"an old journal of an East India voyage". "Three ships sailed from England and the company were delayed by calms. The crews of two ships were ill and unable to bring them properly to anchor" at the end of their voyage. The third ship provided crew hands for this purpose. The healthy crew was due to the Captain's "obliging each man of his crew to drink a glass of lemon juice fasting each morning during the voyage". Franklin then commented, "This was printed 150 years ago and yet is has not become practice". The use of lemon juice to prevent scurvy later earned the British sailor the nickname "Limey".

Modern psychiatrists, family and sex counselors would be interested reading some of Franklin's letters: One such letter was addressed to Arthur Lee, a fellow American diplomat in

Paris, who was very critical of Franklin's diplomatic endeavors and slowness in answering Lee's often bitter, critical letters: "Sir, it is true I have omitted answering some of your letters. I do not like to answer angry letters. I hate disputes. I am old, cannot have long to live, have much to do and no time for altercations. If I have often received and worn your majestorial snubbings and rebukes without reply, describe it to the right causes, my concern for the honor and success of our mission, which would be hurt by our quarreling, my love of peace, my respect for your good qualities, and my pity for your sick mind, which is forever tormenting itself with its jealousies, suspicions and fancies that others mean you ill, wrong you, or fail in respect for you. If you do not cure yourself of this temper, it will end in insanity, of which it is a symptomatic forerunner, as I have seen in several instances. God preserve you from so terrible an evil; and for His sake, pray suffer me to live in quiet".

Sex advice is given a young man in the letter entitled "Choice of a Mistress', which for many years the State Department allowed "only gentlemen" to see. Changing morals allowed it to be printed in 1926: "My dear friend, I know of no medicine to fit to dimish the violent nature Inclinations you mention; and if I did, I think I should not communicate it to you. Marriage is the proper Remedy. It is the most natural State of Man, and therefore, the State in which you are most likely to find solid Happiness. Your reasons against entering into it at present, appear to me not well-founded. The circumstantial Advantages you have in View of postponing it, are not only uncertain, but they are small in comparison with that of the Thing itself, the being married and settled. It is the Man and Woman united that make the compleat human Being. Separate, she wants his Force of Body and Strength of Reason; he, her Softness, Sensibility and acute Discernment. Together they are most likely to succeed in the World. A single Man has not nearly the Value he would have in that State of Union. He is an incomplete Animal. He resembles the odd Half of a Pair of Scissars. If you get a prudent healthly Wife, you Industry in your Profession, with her good Economy, will be a Fortune sufficient.

But if you will not take this Counsel, and persist in thinking a Commerce with the Sex inevitable, then I repeat my former Advice, that in all your Amours you should prefer old Women to young ones. You call this a Paradox, and demand my Reasons. They are these:

1. Because as they have more Knowledge of the World and their Minds are better stor'd with Observations, their Conversation is more improving and more lastingly agreable.

2. Because when Women cease to be handsome, they study to be good. To maintain their Influence over Men, they supply the Diminution of Beauty by an Augmentation of Utility. They learn to do a 1000 Services small and great, and are the most tender and useful of all Friends when you are sick. Thus they continue amiable. And hence there is hardly such a thing to be found as an old Woman who is not a good Woman.

3. Because there is no hazard of Children, which irregularly produc'd may be attended with much Inconvenience.

4. Because thro' more Experience, they are more prudent and discreet in conducting an Intrigue to prevent Suspicion. The Commerce with them is therefore safer with regard to your Reputation. And with regard to theirs, if the Affair should happen to be known, considerate people might be rather inclin'd to excuse and old Woman who would kindly take care of a young Man, form his Manners by her good Counsels, and prevent his ruining his Health and Fortune among mercenary Prostitutes.

5. Because in every Animal that walks upright, the Deficiency of the Fluids that fill the Muscles appears first in the highest Part: The Face first grows lank and wrinkled; then the Neck; the the Breast and Arms; the lower Parts continuing to the last as plump as ever: So that covering all above with a Basket, and regarding only what is below the Girdle, it is impossible of two Women to know an old from a young one. And as in the dark all Cats are grey, the Pleasure of corporal Enjoyment with an old Woman is at least equal, and frequently superior, every Knack being by Practice capable of Improvement.

6. Because the sin is less. The debauching a Virgin may be her Ruin, and make her for Life unhappy.

7. Because the Compunction is less. The having made a young Girl miserable may give you frequent bitter Reflections; none of which can attend the making an old Woman happy.

8. (thly and Lastly) They are so grateful!!

Thus much for my Paradox. But still I advise you to marry directly; being sincerely your affectionate Friend."

(To Be Continued Next Month)

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

SCIENTIFIC ASSEMBLY COMMITTEE

The meeting of the Scientific Assembly Committee of the Arizona Medical Association, Inc. held Saturday, November 8, 1975 at 810 West Bethany Home Road, Phoenix, AZ convened at 1:29 p.m. Milton S. Dworin, M.D., Chairman, presiding.

MINUTES

The minutes of the meeting held June 7, 1975, were approved as distributed.

1977 MEETING

Mr. Robinson reported that the University of Washington School of Medicine has agreed to provide the faculty for the 1977 meeting which will be held at the Hyatt Regency Hotel in Phoenix.

GOLF TOURNAMENT

It was recommended that Robert B. Skipton, M.D. be asked to chair the 1976 Annual Golf Tournament.

TENNIS TOURNAMENT

It was recommended that Mrs. Robert F. Crawford be asked to chair the 1976 Annual Tennis Tournament.

SOCIAL FUNCTIONS

The Committee approved the following schedule of social functions.

Wednesday, April 28 — Steak Fry
Thursday, April 29 — ArMPAC
Friday, April 30 — President's Banquet

1976 SCIENTIFIC PROGRAM

Offers of Speakers

Offers to provide speakers were made by the following:

1. National Association of Private Psychiatric Hospitals
2. American Foundation for the Science of Creative Intelligence
3. American Society for Clinical Pharmacology and Therapeutics
4. Endo Laboratories
5. Hoechst — Roussel Pharmaceuticals

No action was taken at this time.

Woman's Auxiliary

It was determined that the following programs would be presented with special emphasis for women who would be invited to attend:

"Estate Planning"
"The Male Menopause"
"The Impaired Physician"
"Breast Cancer"

University of Utah College of Medicine

The following faculty from the subject school are to be asked to participate:

Carter M. Ballinger, M.D. Associate Professor, Anesthesiology
David G. Bragg, M.D., Professor, Chairman, Radiology
Earl Z. Browne, M.D., Assistant Professor, Surgery
Mark P. Heilbrun, M.D., Assistant Professor, Surgery
John H. Holbrook, M.D., Assistant Professor, Internal Medicine
Leonard W. Jarcho, M.D., Professor, Associate Professor, Chairman Neurology & Internal Medicine
Fred T. Kolouch, M.D., Assistant Professor, Psychiatry
G. Richard Lee, M.D.
Robert W. McDivitt, M.D.
Frank G. Moody, M.D., Professor, Chairman, Surgery
Cecil O. Samuelson, M.D., Assistant Professor, Internal Medicine
Clifford C. Snyder, M.D., Professor, Surgery
Michael H. Stevens, M.D., Instructor, Surgery
Anthony R. Temple, M.D., Assistant Professor, Pediatrics

EXECUTIVE COMMITTEE

The Executive Committee meeting of the Arizona Medical Association, Inc. held in the Zuppke Room of Marriott's Camelback Inn, Scottsdale, Arizona on Friday, November 14, 1975, a quorum being present, convened at 9:26 p.m., William C. Scott, M.D. President and Chairman, presiding.

MINUTES

The minutes of the meeting held October 17, 1975 were approved as distributed.

MALPRACTICE SPECIAL ASSESSMENT

Letters to County Society Presidents

As directed at the last meeting, letters have gone to the presidents of each county medical society asking their help in getting the physicians to pay the special assessment. RECEIVED

Exemptions

IT WAS MOVED AND CARRIED TO EXEMPT THE FOLLOWING FROM PAYING THE SPECIAL ASSESSMENT IN ACCORDANCE WITH THE REQUESTS OF THE APPROPRIATE COUNTY MEDICAL SOCIETY:

Carl W. Ahl, M.D.
Edmond F. Glow, M.D.
R. W. Rosenquist, M.D.

Status Report

The following is the status of collections of the special assessment as of November 17, 1975.

Local Papers and Next Meeting

It was determined that following the December 1st deadline a subcommittee would review all local paper applicans and prepare their recommendations to the Committee at its next meeting on December 13th.

Meeting adjourned 3:14 p.m.

William E. Crisp, M.D.
Secretary
By
Bruce E. Robinson
Executive Director

TRAVELERS INSURANCE COMPANIES

Legal Opinion

The Committee reviewed the opinion of Snell & Wilmer regarding the "contract" between the Travelers Insurance Companies and ArMA. The essence of the opinion is:

> "Travelers is obligated to make medical malpractice insurance coverage available for qualifying members of ArMA for a five year period commencing on or about April 1, 1971 and terminating April 1, 1976. Thereafter, subject to a qualification to be explained hereafter, Travelers has no further obligation under its contract."

RECEIVED FOR INFORMATION.

Wheeler H. Hess letter 10/27/75

The following letter was received from Mr. Hess, Vice President of The Travelers, in response to our request for an extension of the 4/1/76 deadline:

> "In reply to your letter of October 14, we are not willing to extend our program beyond April, 1976. The market situation has worsened since August when we first advised you that our program would terminate in April, and we continue to be totally unsuccessful in securing reinsurance. As we mentioned in August, the involuntary pools continue to proliferate.
>
> In summation, the pressure on our capacity becomes greater all the time, and it appears that the only short-term solution to provide a continuity of insurance in Arizona will be through the establishment of a joint underwriting association (JUA). Hopefully, the implementation of such a JUA will in no way impede the juridical changes which are essential to address the root causes of the malpractice problem."

RECEIVED FOR INFORMATION

Mr. Barnett reported on a meeting that Dr. Brooks and Mr. Barnett had with Mr. Hess on 11/7/75 which dealt with the above subject. No response to that meeting had been received to date.

County	Total Billed	Total Paid	% of Total Billed	Other Response	Total Accounted For	% of Total Billed
Apache	10	10	100.0		10	100.0
Cochise	32	24	75.0		24	75.0
Coconino	50	47	94.0	1	48	96.0
Gila	11	8	72.7		8	72.7
Graham	9	7	77.8	1	8	88.9
Greenlee	9	8	88.9		8	88.9
Maricopa	1230	1143*	92.9	19	1162	94.4
Mohave	23	20	87.0		20	87.0
Navajo	6	4	66.7	1	5	83.3
Pima	551	460	83.5	16	476	86.4
Pinal	40	31	77.5		31	77.5
Santa Cruz	8	8	100.0		8	100.0
Yavapai	40	36	90.0		36	90.0
Yuma	47	39	83.0	1	40	85.1
Total	2066	1845	89.3	39	1884	91.2

Net collected to date: $184,460.00 (includes 2 partial payments, 1-$50.00 & 1-$10.00)

* Includes 5 payments from members or future members not billed

The Physicians' News Bureau Inc.

The following letter dated 10/29/75 was received from Merrill S. Chernov, M.D.:

"Your recent letter of October 20, 1975 has been received and noted. The Physicians' News Bureau has dedicated itself to helping the physicians during this malpractice crisis. The Physicians' News Bureau does not wish to undermine any efforts by the Arizona Medical Associations' malpractice-crisis committee headed by Dr. Jack Brooks.

I wish to inform you that you have our full cooperation and we will be more than willing to lend our support if called upon to do so."

BENJAMIN RUSH HOUSE

Dr. Scott reviewed the letter of thanks for the $1000 contribution to the subject memorial project received from the Pennsylvania Medical Society.

PODIATRY

Correspondence between the Arizona Podiatry Association and the Department of Health Services regarding hospital privileges was reviewed.

It was determined to forward copies of the letters to the orthopedic society for their information.

COLLEGE OF AGRICULTURE

Material regarding the University of Arizona College of Agriculture's "Well Aware About Health" program was reviewed.

IT WAS MOVED AND CARRIED TO REFER THIS MATTER TO THE BOARD OF MEDICAL EXAMINERS EXPRESSING CONCERN OVER THE POSSIBILITY OF THAT CERTAIN ASPECTS OF THE PROGRAM CONSITUTE THE PRACTICE OF MEDICINE.

HOUSESTAFF SECTION

Request for Attendees at the National Leadership Conference

IT WAS MOVED AND CARRIED TO AUTHORIZE THE CHAIRMAN AND ONE OTHER MEMBER TO ATTEND THE CONFERENCE AT THE ASSOCIA— TIONS EXPENSE.

College of Medicine

The Housestaff letter of 11/11/75 to the Board of Mediation of the Pima County Medical Society regarding the College of Medicine controversy was received.

HOSPITALITY SUITE

The request that we fund a hospitality suite at the Hawaii meeting of the AMA was discussed. It was determined that we would not, however it was recommended that we suggest to Dr. Shapiro that he may want to discuss the possibility of having a joint Rocky Mountain Conference suite at future meetings.

HEALTH PLANNING AGENCIES

It was suggested that we develop a list of physicians who are active on the various health planning agencies.

Meeting adjourned 10:36 p.m.

William E. Crisp, M.D.
Secretary

Future Medical Meetings

CONTINUING MEDICAL EOUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVEO ArMA ACCREOITATION FOR CONTINUING MEOICAL EOUCATION.

ARIZONA STATE HOSPITAL, PHOENIX
GOOD SAMARITAN HOSPITAL, PHOENIX
PHOENIX INOIAN MEDICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EOUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEOICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREOIT FOR THE ArMA CERTIFICATE IN CONTINUING MEOICAL EOUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARO.

NINETEENTH ANNUAL CARDIAC SYMPOSIUM

January 23-24, 1976
Mountain Shadows, Scottsdale, AZ

SPONSOR: American Heart Assoc., Arizona Affiliate

CONTACT:
Brendan Phibbs, M.D., Prog. Dir.
American Heart Association
1445 E. Thomas Road
Phoenix, AZ 85014

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

THE SEVENTH ANNUAL TUCSON SEMINAR IN OBSTETRICS AND GYNECOLOGY

January 22-23, 1976
The Department of Obstetrics and Gynecology
University of Arizona College of Medicine
and The Arizona Medical Center

SPONSOR: The American College of Obstetricians and Gynecologists and The American Academy of Family Practice

CONTACT:
Department of Obstetrics and Gynecology
University of Arizona, College of Medicine

Approved for 15 required hours toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CLINICAL PRESENTATIONS

8-9 a.m. First Four Wednesday
Mornings of Each Month
Phoenix Indian Medical Center
4212 North 16th Street
Phoenix, AZ 85016

Jan. 21, 1976 — Adult Respiratory Distress Syndrome, A Case Presentation.
Jan. 28, 1976 — Recent Advance in Genetics.

SPONSOR: Phoenix Indian Medical Center

CONTACT:
Leland L. Fairbanks, M.D., Director Medical Education
Phoenix Indian Medical Center

Approved for one required hour per session toward the ArMA Certificate in Continuing Medical Education.

THIRD ANNUAL SYMPOSIUM of the BARROW NEUROLOGICAL INSTITUTE

Camelback Inn, Scottsdale, AZ
February 5 - 7, 1976

SPONSOR: Barrow Neurological Institute

CONTACT:

Richard A. Thompson, M.D., Division of Neurology
Barrow Neurological Institute
St. Joseph's Hospital & Medical Center
350 West Thomas Road
Phoenix, AZ 85013

Approved for 15 required hours toward the ArMA Certificate in Continuing Medical Education.

NINTH ANNUAL SOUTHWESTERN CLINICAL PHARMACY SEMINAR

February 6-8, 1976
Braniff Place, Tucson, AZ

SPONSOR: College of Pharmacy, U of A

CONTACT:
Carl E. Trinca, M.S.
College of Pharmacy
University of Arizona
Tucson, AZ 85721

Approved for 7.5 required hours toward the ArMA Certificate in Continuing Medical Education.

SOUTHWESTERN SEMINAR ON NEUROMUSCULAR DISEASES

February 13-14, 1976

SPONSOR: U of A College of Medicine
Depts. of Neurology and Pathology

CONTACT:
Lawrence Z. Stern, M.D.
Jack M. Layton, M.D.
College of Medicine
Tucson, AZ 85724

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

TAOS MEDICAL-SKI SYMPOSIUM

February 18-21, 1976
Taos, New Mexico

SPONSOR: Albuquerque Chapter of AAFP

CONTACT:
Dale A. Gray, M.D.
308 Winrock Medical Plaza, N.E.
Albuquerque, New Mexico 87110

INTERNATIONAL CONFERENCE ON INTEGRATED CANCER MANAGEMENT

February 18-21, 1976
Phoenix, AZ, Adams Hotel

SPONSOR: Good Samaritan Hospital, Division of Oncology, American Cancer Society, Arizona Division

CONTACT:
Robert Thoeny, M.D., Prog. Chairman
Director of Radiation Oncology
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education.

PROSTOGLANDINS

February 19, 1976
Flagstaff, AZ

SPONSOR: Coconino County Medical Soc. & Upjohn Pharmaceutical Co.

CONTACT:
Mr. Dan O'Connor, Prog. Dir.
900 N. Cahuenga Blvd.
Los Angeles, CA 90038

Approved for 1 elective hour toward the ArMA Certificate in Continuing Medical Education.

PURGATORY MEDICAL-SKI SYMPOSIUM

Hypertension
March 12-13, 1976

SPONSOR: Albuquerque Chapter of AAFP

CONTACT:
David R. Holten, M.D.
8401 Constitution, N.E.
Albuquerque, New Mexico 87110

UPDATE: PRIMARY CARE 1975

March 24-27, 1976
Arizona Medical Center, Tucson, AZ

SPONSOR: U of A College of Medicine
Department of Continuing Medical Education

CONTACT:
George D. Comerci, M.D.
1501 N. Campbell
Tucson, AZ 85724

Approved for 22 required hours toward the ArMA Certificate in Continuing Medical Education.

PRINCIPLES OF MEDICAL PRACTICE MANAGEMENT FOR THE PRATICING PHYSICIAN

March 12-13, 1975
Hyatt Regency, Phoenix, AZ

SPONSOR: Arizona Medical Association

CONTACT:
Bruce E. Robinson, Executive Director
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

Approved for 14 required hours toward the ArMA Certificate in Continuing Medical Education.

DAY OF RHEUMATOLOGY

March 12, 1976
Camelback Inn, Scottsdale, AZ

SPONSOR: St. Joseph's Hospital & Medical Center

CONTACT:
Ethelann Murray, M.D.
St. Joseph's Hospital & Medical Center
350 W. Thomas Road
Phoenix, AZ 85013

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

GASTROENTEROLOGY FOR CLINICIANS—1976

March 18-20, 1976
Adams Hotel, Phoenix, AZ

SPONSOR: Institute of Gastroenterology
Good Samaritan Hospital

CONTACT:
David C. H. Sun, M.D.
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wednesday, September - May
4:00 p.m. to 5:30 p.m.
Arizona Medical Center, Tucson, AZ, Rm. 8403

SPONSOR: Department of Psychiatry, U of A
College of Medicine

CONTACT:
Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ per session toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital, Trek Room, Tucson, AZ

SPONSOR: Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice.

CONTACT:
Richard Silver, M.D., Dir.
Medical Education
Century Medical Plaza, Ste. 106
1701 West St. Mary's Road
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

PHYSICIAN TRAINING PROGRAM

October 1, 1975 - June 30, 1976
Tucson Medical Center, Tucson, AZ

SPONSOR: Arthritis Services Program

CONTACT:
Beth Ziebell, Prog. Dir.
3813 E. 2nd St.
Tucson, AZ 85716

Approved for 30 required hours toward the ArMA Certificate in Continuing Medical Education.

STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p.m.
Arizona State Hospital, Phoenix, AZ

SPONSOR: Arizona State Hospital

CONTACT:
Howard E. Wulsin, M.D.
Arizona State Hospital
2500 E. Van Buren
Phoenix, AZ 85008

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month
Plaza International, Tucson, AZ

SPONSOR: U of A Medical Center, Dept. of Radiology

CONTACT: Irwin M. Freundlich, M.D.
Arizona Medical Center
Dept. of Radiology
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuiing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURGICAL GRAND ROUNDS
4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave.
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

Directory

THE ARIZONA MEDICAL ASSOCIATION, INC., ORGANIZED 1892, 810 W. BETHANY HOME ROAD, PHOENIX, ARIZONA 85013.

OFFICERS AND DIRECTORS — 1975-76

President—William C. Scott, M.D. U. of A., Dept. of OB-GYN, Tucson 85724
President-Elect—Edward Sattenspiel, M.D. 333 W. Thomas Rd., Phoenix 85013
Vice President—John F. Kahle, M.D. 715 N. Beaver, Flagstaff 86001
Secretary—William E. Crisp, M.D. 926 E. McDowell Rd., Phoenix 85006
Treasurer—Richard L. Dexter, M.D. P. O. Box 26926, Tucson 85726
Past President—William G. Payne, M.D. P. O. Box V, Tempe 85281
Editor-In—Chief—John W. Kennedy, M.D. 705 E. Tuckey Ln., Phoenix 85014
Delegate to AMA—Seymour I. Shapiro, M.D. 5402 E. Grant Rd., No. F, Tucson 85712
Delegate to AMA—Richard O. Flynn, M.D 2210 S. Mill Ave., Tempe 85281
Delegate to AMA—W. Scott Chisholm, Jr., M.D. 1158 E. Missouri Ave., Phoenix 85014
Alt. Delegate to AMA—Arthur V. Dudley, Jr., M.D. 1601 N. Tucson Blvd., Tucson 85716
Alt. Delegate to AMA—John J. Standifer, M.D. 412 E. Oak St., Kingman 86401
Alt. Delegate to AMA—Patrick P. Moraca, M.D 217 E. Virginia, Phoenix 85004
AMA Trustee—Daniel T. Cloud, M.D. 3411 N. 5th Ave., Phoenix 85013

DISTRICT DIRECTORS

Central District—Reginald J. M. Zeluff, M.D. 217 E. Virginia, Phoenix 85004
Central District—George L. Hoffmann, M.D. 438 W. 5th Place, Mesa 85201
Central District—James M. Hurley, M.D. 3143 N. 32nd St., Phoenix 85018
Central District—Wallace A. Reed, M.D. 1040 E. McDowell Rd., Phoenix 85006
Central District—Lawrence J. Shapiro, M.D. 550 W. Thomas Rd., Phoenix 85013
Northeastern District—Jack I. Mowrey, M.D. P. O. Box 887, Lakeside 85929
Northwestern District—Richard T. McDonald, M.D. 713 N. Beaver, Flagstaff 86001
Southeastern District—Edward R. Curtis, M.D. 503 5th Ave., Safford 85546
Southern District—Richard S. Armstrong, M.D P. O. Box 12787, Tucson 85732
Southern District—Henry P. Limbacher, M.D. 2205 E. Hampton, Tucson 85719
Southern District—Vernor F. Lovett, M.D. 5402 E. Grant Rd., Tucson 85712
Southwestern District—Glen H. Walker, M.D. 291 W. Wilson, Coolidge 85228

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

President—Herbert W. Bradley, M.D. 800 Third St., Maryville, CA 95001
President-Elect—Fernando de La Cueva, M.D. Pavo No. 135-306, Guadalajara, Jalisco, Mexico
Vice President—Thomas H. Taber, Jr., M.D. 2021 North Central Ave., Phoenix, AZ 85004
Secretary-USA—Schyuler V. Hilts, M.D. Tucson Medical Center, P.O Box 6607, Tucson, AZ 85733
Secretary-Mexico—Ricardo Ortiz Amezcua, M.D. Americas No. 624-1, Guadalajara, Jalisco, Mexico
Treasurer-USA—Lucy A. Vernetti, M.D. 333 West Thomas Rd., No. 207, Phoenix, AZ 85013
Treasurer-Mexico—Jorge Riggen Davila, M.D. Marsella No. 510-Sur, Guadalajara, Jalisco, Mexico
Executive Secy. USA—Mrs. Virginia E. Bryant 333 W. Thomas Rd., 207, Phoenix, AZ 85013
Executive Secy.-Mexico—Sr. Alfredo Patron Herberto Frias No. 60-Sur. Mazatlan, Sinaloa, Mexico

COMMITTEES — 1975-76

ARTICLES OF INCORPORATION & BYLAWS: Charles E. Henderson, M.D., Chairman (Phoenix); Philip E. Dew, M.D., (Tucson); Arnold H. Dysterheft, M.D (Lakeside); Paul B. Jarrett, M.D., (Phoenix); Clarence E. Yount, Jr., M.D.

BENEVOLENT AND LOAN FUND: Arthur V. Dudley, M.D., Chairman, (Tucson); George Adams, M.D., (Tucson); Richard L. Dexter, M.D. (Tucson); R. Lee Foster, M.D. (Phoenix); Edward J. Lefeber, M.D. (Mesa); Cecil C. Vaughn, Jr., M.D. (Phoenix); Carl E. Voldeng, M.D. (Phoenix).

FINANCE: Richard L. Dexter, M.D., Chairman (Tucson); William J. Dunn, M.D. (Phoenix): Herbert C. Erhart, Jr., M.D. (Springerville); James L. Grobe, M.D., (Phoenix); Charles C. Hedges, Jr., M.D. (Phoenix); Gerald Marshall, M.D. (Phoenix); Robert P. Purpura, M.D., (Tucson); Otto S. Shill, Jr., M.D. (Tempe); Seymour I. Shapiro, M.D. (Tucson); George Wallace, M.D. (Scottsdale).

GOVERNMENTAL SERVICES: Arthur D. Nelson, M.D., Chairman, (Scottsdale); John A. Ash, M.D., (Phoenix); Otto L. Bendheim, M.D., (Phoenix); Suzanne E. Dandoy, M.D., (Phoenix); Donn G. Duncan, M.D., (Tucson); Walter R. Eicher, M.D. (Chandler); Lloyd S. Epstein, M.D., (Tucson); John W. Heaton, M.D., (Phoenix); Charles Kalil, M.D. (Phoenix); Frank V. Keary, M.D., (Tucson); Louis C. Kossuth, M.D. (Phoenix); Joseph J. Likos, M.D. (Phoenix); Joseph L. Marcarelli, M.D., (Sun City); Dermont W. Melick, M.D., (Tucson); O. Melvin Phillips, M.D., (Scottsdale); Wallace A. Reed, M.D. (Phoenix); Helen M. Roberts, M.D. (Phoenix); Marvin C. Schneider, M.D., (Phoenix).

HEALTH MANPOWER: Louis C. Kossuth, M.D., Chairman (Phoenix); Casey D. Blitt, M.D., (Tucson); Bruce N. Curtis, M.D., (Safford); Alexander Kelter, M.D., (Tucson); Edward J. Lefeber, Jr., M.D. (Mesa); Roger A. Lueck, M.D., (Phoenix); Dermont W. Melick, M.D., (Tucson); John B. Miller, M.D., (Phoenix); Andrew W. Nichols, M.D., (Tucson); Robert St. John, M.D., (Phoenix); Manus R. Spaniter, M.D. (Prescott); H. Stephens Thomas, M.D., (Phoenix); Jesse W. Tapp, Jr. M.D., (Tucson); Herbert L. Winograd, M.D., (Phoenix).

HISTORY & OBITUARIES: John W. Kennedy, M.D., Chairman (Phoenix); Francis J. Bean, M.D. (Tucson); Walter Brazie, M.D., (Kingman); C.Bland Giddings, M.D., (Mesa); John R. Creen, M.D., (Phoenix); Abe I. Podolsky M.D. (Yuma); Jay L. Sitterley, M.D., (Flagstaff).

LEGISLATIVE: Edward Sattenspiel, M.D., Chairman, (Phoenix); Richard W. Abbuhl, M.D., (Phoenix); James E. Campbell, M.D., (Phoenix); John S. Carlson, M.D., (Phoenix); W. Scott Chisholm, Jr., M.C. (Phoenix); Sam C. Colachis, Jr., M.D. (Phoenix); Richard L. Collins, M.D., (Scottsdale) Donald F. Griess, M.D., (Tucson); Louis Hirsch, M.D., (Tucson); Robert D. Hedgell, M.D., (Prescott); John P. Holbrook, M.D., (Tucson); Gerald Marshall, M.D., (Phoenix); Richard McGill, D.O., (Phoenix); Gerald F. McNally, M.D., (Prescott); Donald R. Miles, M.D., (Phoenix); R. Michael O'Harra, M.D., (Phoenix); Robert J. Oliver, III, M.D., (Tucson); Ratibor Patovich, M.D., (Phoenix); O. Melvin Phillips, M.D., (Scottsdle); Wilred M. Potter, M.D., (Scottsdale); Paul L. Schnur, M.D., (Tucson); Berton Siegel, D.O., (Phoenix); John Vosskuhler, M.D., (Flagstaff); Dennis Weiland, M.D., (Scottsdale).

MATERNAL & CHILD HEALTH CARE: Raymond J. Jennett, M.D., Chairman (Phoenix); Frederic W. Baum, M.D. (Tempe); Walter B. Cherny M.D., (Phoenix); C. Donald Christian, M.D. (Tucson); Warren A. Colton, Jr., M.D., (Tempe); William J. R. Daily, M.D., (Phoenix); Jack H. Demlow, M.D., (Tucson); Glenn M. Friedman, M.D. (Scottsdale); Harlan R. Giles, M.D., (Tucson); Walter K. Kippard III, M.D. (Phoenix); Belton P. Meyer, M.D., (Phoenix); William J. Moore, M.D., (Phoenix); William G. Payne, M.D., (Tempe); David Pent, M.D., (Phoenix); Hermann S. Rhu, Jr., M.D., (tucson); Paul W. Whitmore, D.O., (Phoenix).

MEDICAL ECONOMICS: Robert P. Purpura, M.D., Chairman (Tucson); Richard S. Armstrong, M.D., (Tucson); Albert C. Asendorf, M.D., (Phoenix); Chester G. Bennett, M.D., (Phoenix); Avi Ben-Ora, M.D., (Scottsdale); Charles M. Bergschneider, M.D., (Scottsdale); Arthur M. Brandt, M.D., (Tucson); Sam C. Colachis, Jr., M.D. (Phoenix); Charles F. Dalton, M.D., (Phoenix); George I. Hoffmann, M.D., (Mesa); Frederick W. Jensen, Jr., M.D., (Phoenix); John F. Kahle, M.D., (Flagstaff); Howard N. Kandell, M.D., (Phoenix); Patrick P. Moraca, M.D., (Phoenix); Paul L. Schnur, M.D., (Tucson); George Serbin, M.D., (Phoenix); Richard W. Switzer, M.D., (Tucson); Burton E. Weissman, M.D., (Phoenix); Reginald J. M. Zeluff, M.D., (Phoenix).

MEDICAL EDUCATION: Robert E. T. Stark, M.D., Chairman (Phoenix); James E. Brady, Jr., M.D., (Tucson); Daniel B. Carroll, M.D., (Phoenix); Melvin L. Cohen, M.D., (Phoenix); George D. Comerci, M.D., (Tucson); David J. Crosby, M.D., (Phoenix); Kenneth A. Dregseth, M.D., (Sierra Vista); Francis T. Flood, M.D., (Phoenix); Harry W. Hale, Jr., M.D. (Phoenix); Robert E. Hastings, Jr., M.D., (Tucson); M. Wayne Heine, M.D., (Tucson); Raymond J. Jennett, M.D. (Phoenix); Howard N. Kandell, M.D., (Phoenix); Jack M. Layton, M.D., (Tucson); Laurence R. Mansur, M.D., (Safford); William F. Sheely, M.D., (Phoenix); Lawrence Z. Stern, M.D., (Tucson); Jesse W. Tapp, Jr., M.D., (Tucson); Aston B. Taylor, M.D., (Phoenix); Albert G. Wagner, M.D. (Phoenix).

OCCUPATIONAL HEALTH: Joseph M. Hughes, M.D., Chairman, (Phoenix); Floyd K. Berk, M.D., (Tucson); Richard Besserman, M.D., (Phoenix); Earl M. Best, M.D., (Phoenix); Sheldon Davidson, M.D., (Phoenix); Walter V. Edwards, M.D., (Phoenix); Robert V. Horan, M.D., (Morenci); Robert B. Leonard, M.D., (Phoenix); Florian R. Rabe, M.D. (Scottsdale); Eugene J. Ryan, M.D. (Phoenix); William C. Trier, M.D. (Tucson); Maier Tuchler, M.D. (Phoenix); Willis A. Warner, M.D., (Phoenix).

PHYSICIAN REHABILITATION: Richard E. H. Duisberg, M.D., Chairman (Phoenix); John Bartness, M.D., (Phoenix); Otto L. Bendheim, M.D., (Phoenix); William E. Bishop, M.D., (Globe); John T. Clymer, M.D., (Tucson); Donald L. Damstra, M.D. (Phoenix); Bernard M. Kuhr, M.D., (Tucson); Laurence M. Linkner, M.D., (Phoenix); Walter B. Tomlinson, M.D. (Elgin); Karl E. Voldeng, M.D., (Phoenix); Eleanor A. Waskow, M.D. (Phoenix).

MEMBERS ARE URGED TO BRING MATTERS ON INTEREST AND CONCERN TO THE CHAIRMEN OF THE APPROPRIATE COMMITTEE OR TO THE ATTENTION OF ANY MEMBER OF THE BOARD OF DIRECTORS.

AN INVOLVED MEMBERSHIP IS THE BASIS FOR AN EFFECTIVE ASSOCIATION.

PROFESSIONAL: Robert S. Ganelin, M.D., Chairman, (Phoenix); Paul M. Bindelgas, M.D., (Phoenix); Paul B. Borgeson, M.D., (Phoenix); John A. Bruner, M.D., (Phoenix); L. Philip Carter, M.D., (Phoenix); James L. Grobe, M.D. (Phoenix); Joseph W. Hanss, Jr., M.D., (Phoenix); James M. Hurley, M.D., (Phoenix); Helen Johnson, M.D., (Tucson); Laurence M. Linkner, M.D., (Phoenix); William G. Payne, M.D., (Tempe); Edward Sattenspiel, M.D., (Phoenix); Donald F. Schaller, M.D., (Phoenix); George A. Spendlove, M.D., (Phoenix); Neil O. Ward, M.D., (Phoenix).

PUBLIC RELATIONS: Selma E. Targovnik, M.D., Chairperson (Phoenix); W. David Ben-Asher, M.D., (Tucson); E. Fredrick Bloemker, M.D., (Phoenix); J. Walter Brock, M.D., (Scottsdale); Ronald L. Christ, M.D., (Yuma); Julian DeVries, (Phoenix); Edward B. Grothaus, M.D., (Sierra Vista); Robert A Johnson, M.D., (Phoenix); Robert F. Kelling, Sr., M.D., (Ajo); Irving M. Pallin, M.D., (Sun City); William Russell, Jr., M.D., (Phoenix); Morton S. Thomas III, M.D., (Wickenburg).

PUBLISHING: John W. Kennedy, M.D., Chairman, (Phoenix); Walter V. Edwards, M.D., (Phoenix); Gerald Kaplan, M.D., (Phoenix); George Lastnick, M.D., (Sun City); William B. McGrath, M.D., (Phoenix); David Pent, M.D., (Phoenix); Michael M. Schreiber, M.D., (Tucson); David C. H. Sun, M.D. (Phoenix).

SCIENTIFIC ASSEMBLY: Milton S. Dworin, M.D., Chairman, (Tucson); Merrill M. Abeshaus, M.D., (Flagstaff); Suresh C. Anand, M.D. (Phoenix); Floyd K. Berk, M.D., (Tucson); Thomas E. Bittker, M.D., (Phoenix); W. Scott Chisholm, M.D., (Phoenix); Vicent A. Fulginiti, M.D., (Tucson); Otto Gambacorta, M.D., (Tucson); Jerome Gerendasy, M.D., (Mesa); Laurence M. Haas, M.D., (Tucson); Timothy R. Harrington, M.D., (Phoenix); Clifford J. Harris, Jr., M.D., (Mesa); Thomas F. Hartley, M.D., (Phoenix); Wayne H. Heine, M.D., (Tucson); Thomas S. Henry, M.D., (Flagstaff); James M. Hurley, M.D., (Phoenix); Mark M. Kartchner, M.D., (Tucson); Norman N. Komar, M.D., (Tucson); Eugene Leibsohn, M.D., (Phoenix); Philip Levy, M.D., (Phoenix); William S. Nevin, M.D., (Tucson); Neopito L. Robles, M.D., (Tucson); Richard A. Silver, M.D., (Tucson); Donald P. Speer, M.D., (Tucson); Louis S. San, M.D., (Phoenix); Wilbur C. Voss, M.D., (Tucson); Donald J. Ziehm, M.D., (Phoenix).

COUNTY MEDICAL SOCIETY OFFICERS, 1975-76

APACHE: Daniel L. Neel, M.D., President, P.O. Box 887, Lakeside, 85929; Robert D. Martin, M.D., Secy., Prof. Plaza Bldg., Pinetop, 85935.

COCHISE: John C. Conroy, M.D., President, Copper Queen Hospital, Bisbee, 85603; Pedro Mora, M.D., Secy., 702 Yuma Trail, Bisbee, 85603.

COCONINO: John B. Jamison, M.D., President, 1355 N. Beaver, Flagstaff, 86001; Joseph H. Reno, M.D., Secy. P. O. Box 310, Flagstaff, 86001.

GILA: Bert Lambrecht, M.D., President, Box 777, Miami, 85539; David B. Gilbert, M.D., Secy., P.O. Box 1030, Payson, 85541.

GRAHAM: Dennis Hess, M.D., President, 503 5th Ave., Safford, 85546; Laurence R. Mansur, M.D., Secy., 2016 W. 16th St., Safford, 85546.

GREENLEE: Lyle H. Boyea, M.D., President, Morenci Hospital, Morenci, 85540; Roberto A. Dinglasan, M.D., Secy., Morenci Hospital, 85540.

MARICOPA: Walter R. Eicher, M.D., President; Max L. Wertz, M.D., Secy. (Society address: 2025 N. Central Ave., Phoenix, 85004).

MOHAVE: Joseph McAndrew, M.D., President, P.O. Box 1916, Lake Havasu City, 86403; Earl S. Gilbert, M.D., Secy., Gen. Hospital, 86401.

NAVAJO: Robert J. Haley, III, M.D., President, P.O. Box 700, Holbrook, 86025; Harry Beckwith, M.D., Secy. East 2nd & Colorado Ave., Winslow, 86047.

PIMA: James L. Parsons, M.D., President; Stuart W. Westfall, M.D., Secy. (Society address: 2655 East Adams St., Tucson 85716.

PINAL: Paul A. Rosborough, M.D., President, 1195 N. Arizona Blvd., Coolidge 85228; Howard Hyde, M.D., Secy., 1023 E. Florence Blvd., Casa Grande, AZ 85222.

SANTA CRUZ: J. S. Gonzalez, M.D., President,P.O. Box 1209, Nogales, 85621; Charles S. Smith, M.D., Secy. Box 1382, Nogales, 85621.

YAVAPAI: David C. Duncan, M.D., President, 801 Miller Valley Rd., Prescott, 86301; John J. Houston, M.D., Secy. 542 N. Hassayampa Dr., Prescott, 85301.

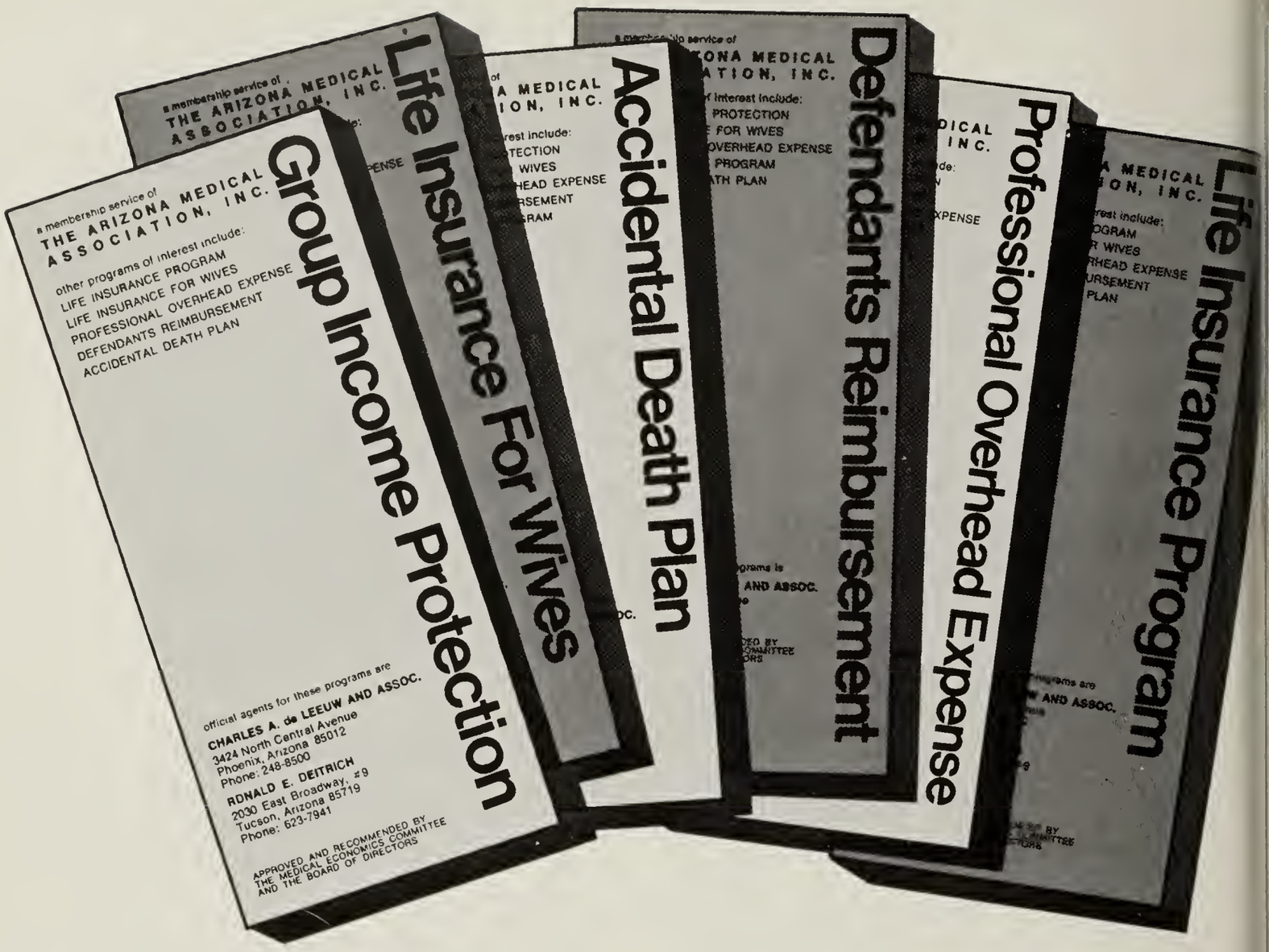
YUMA: Dirk Frauenfelder, M.D., President, 2244 S. Avenue A., Yuma 85364; Elwood L. Schmidt, M.D., Secy., 1812 8th Ave., Yuma 85364.

WOMAN'S AUXILIARY TO THE ARIZONA MEDICAL ASSOCIATION 1975-76

PRESIDENT Mrs. Howard W. Kimball (Ella)
414 W. Northview, Phoenix 85021
PRESIDENT-ELECT Mrs. George L Hoffmann (Julie)
540 Mesa Vista Lane, Mesa 85203
IST VICE PRESIDENT Mrs. Joseph Reno (Maude)
621 W. Beal Rd., Flagstaff 86001
2ND VICE PRESIDENT Mrs. Arnold Hollander (Carol)
75745 Sabino Vista Dr., Tucson 85715
RECORDING SECY Mrs. Albert Asendorf (Donna)
502 E. Claremont St., Phoenix 85012
TREASURER Mrs. Thurman Leonard (Ann)
2261 E. Glenn, Tucson 85719
DIRECTOR 1974-76 Mrs. Robert Delph (Grace)
600 Robin Lane, No. 24, Yuma 85364
DIRECTOR 1975-76 Mrs. Raymond Vaaler (Ann)
3624 N. 54th Court, Phoenix 85018
DIRECTOR 1975-77 Mrs. Albert Wagner (Helen)
3216 E. Meadowbrook, Phoenix 85018
CHAPLAIN Mrs. Sam M. Mackoff (Selma)
5343 N. 23rd St. Phoenix, 85016
CORRESP. SECY. Mrs. Charles Kalil (Ylma)
1300 E. Missouri, Phoenix 85014
HISTORIAN Mrs. Melvin Phillips (Jean)
1001 Norris Rd., Prescott 86301
PARLIAMENTARIAN Mrs. Lewis S. Winter (Jean)
1714 E. Rose Lane, Phoenix 85016

STANDING AND SPECIAL COMMITTEES

AMA-ERF Mrs. Earl Gilbert (Vicki)
3010 Van Martier Court, Kingman 86401
BYLAWS, PROCEDURES, GUIDELINES Mrs. Paul Jarrett (Beverley)
501 E. Pasadena, Phoenix, 85012
COMMUNICATIONS Mrs. Lynn Newman (Joyce)
4531 W. Seldon Lane, Glendale 85302
COMMUNITY HEALTH Mrs. Gordon Tekell (Pat)
1391 Gateway Ave., Yuma 85364
CONVENTION Mrs. Ronald Johnson (Terry)
532 W. Northview, Phoenix 85021
FAMILY HEALTH Mrs. Edward Bryne-Quin (Ruth)
7081 E. Opatas Place, Tucson 85715
FINANCE Mrs. John Hayes (Shirley)
717 W. El Camino, Phoenix 85021
GEMS Mrs. Ronald Kolker (Ruth)
6211 Camino Almonte, Tucson 85718
HAMER EDUCATION LOAN FUND Mrs. William Biship (Marion)
211 W. 3rd, Globe 85501
HEALTH EDUCATION Mrs. Charles C. Hedges, Jr., (Dottie)
5227 E. Fresno Dr., Phoenix 85018
HEALTH MANPOWER Mrs. Luis Tan (Mary Jo)
3510 E. Nita Rd., Paradise Valley 85253
HOSTESS Mrs. Rex Vaubel
117 W. Glenn Dr., Phoenix 85021
INTERNATIONAL HEALTH Mrs. J. O. Soderstrom (Juanita)
805 Prescott Heights Dr., Prescott 86301
LEGISLATION Mrs. John A. Ash (Agnes)
5818 N. 3rd Ave., Phoenix 85013
MEMBERSHIP Mrs. Joseph Reno (Maude)
621 W. Beal Rd., Flagstaff 86001
PROGRAM Mrs. Arnod Hollander (Carol)
7545 Sabino Vista Dr., Tucson 85715



Quality protection
Association approved & recommended

1. These 6 plans were especially created for the medical profession under the auspices of The Arizona Medical Association as a unique membership service. Approved by the Medical Economics Committee.

2. In addition to excellence of coverage there is supervision and control by your Association.

3. In many instances...a substantial saving in required premiums.

4. Inquiries may be directed to the Association office or to the licensed resident agents.

THE ARIZONA MEDICAL ASSOCIATION INC. ORGANIZED 1892 INCORPORATED 1950 ARIZONA

Charles A. deLeeuw and Assoc.
3424 N. Central Ave.
Phoenix, Az. 85012
248-8500

Ronald Deitrich
2030 E. Broadway, Suite 9
Tucson, Az. 85719
792-1020

YOU WORKED HARD



FOR THAT DIPLOMA..

why not have it laminated?

it will last a lifetime....

THE PLAQUE SHOP

Wood plaques — Ready to hang
No glass to break — Moisture proof
Dirt proof — Impressive.
Our plaques are manufactured locally.

arizona laminating service inc

7231 EAST FIRST AVENUE • SCOTTSDALE, ARIZONA 85251 • (602) 945-9338

MEDICAL BOOKSTORE



The only bookstore in Arizona devoted exclusively to books for the medical profession.

MEDICAL BOOKSTORE
College of Medicine
University of Arizona
Tucson, Arizona 85724
Phone: 882-6669

HOBBY HORSE RANCH SCHOOL

A School For Exceptional Children

The Hobby Horse Ranch School is both home and school for a small group of children. It welcomes the child who is mentally retarded and physically handicapped as well as the backward child who suffers no physical handicap.

The Hobby Horse Ranch School is a branch of Fairview School in Fishkill, New York which was established in 1936.

Directors: Blanche C. Lightowler, B.A.
Matthew W. Lightowler

P.O.B. 44, Cortaro, Ariz.



Emergency — our business

Air Evac — serving all Arizonans — can be ordered by any physician anytime to transport a patient anywhere. Medically trained flight crew is airborne in 30 minutes.

(602) 254-7150

AIR EVAC ®

Samaritan Health Service
Phoenix, Arizona

ArMA OFFERS A NEW
INSURANCE FORM
FOR ALL CLAIMS

An order today will stop the confusion of multiple insurance forms
Sample available on request

COST: $1.75 per hundred

To: Arizona Medical Association
810 West Bethany Home Rd.
Phoenix, AZ 85013

Please send me hundred approved insurance forms costing $1.75 per hundred.

NAME

Address

Bill me ☐ Payment Enclosed ☐

ACT

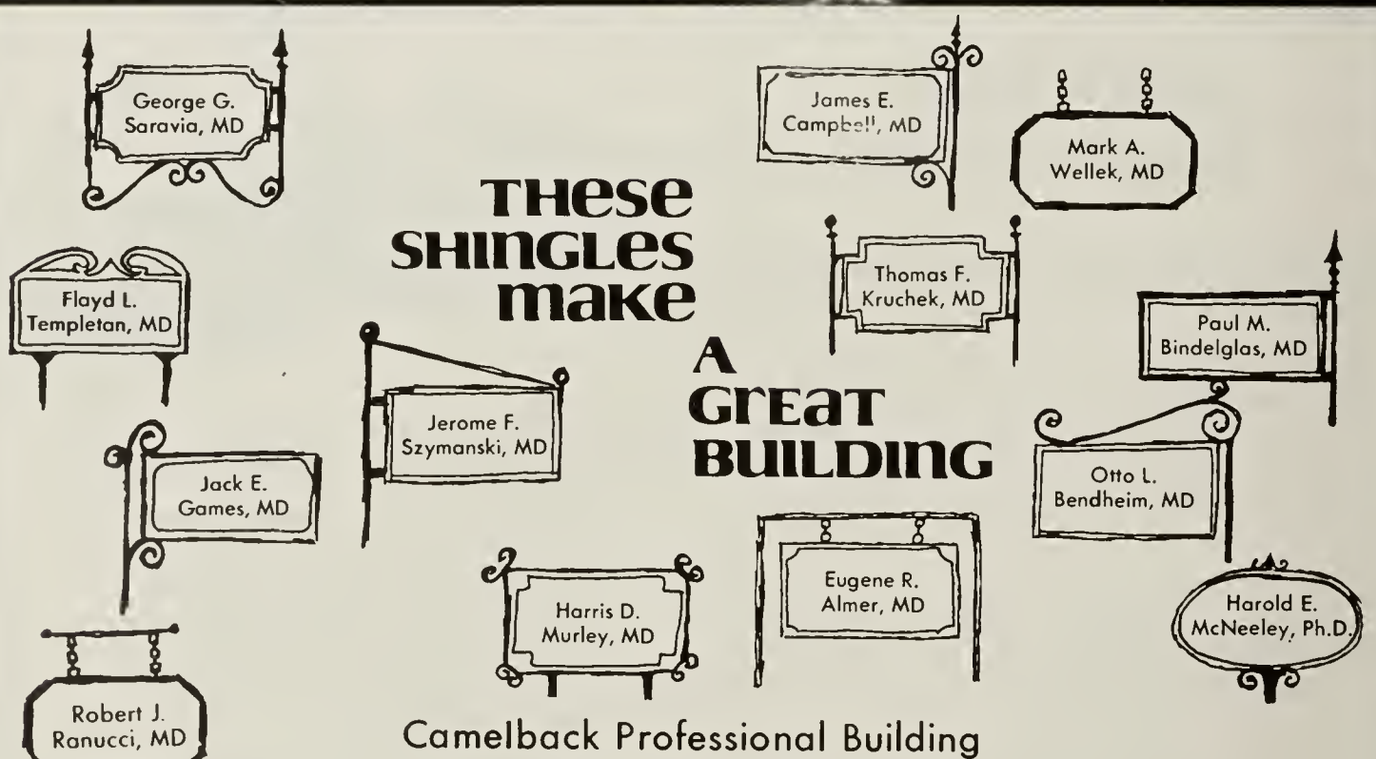
Commodities Investment. . .an investment consideration based on the continuing essential elements and materials. . .

- Allowing the large *or small* investor to utilize the potentials of the commodity market – through limited partnership interests.
- Offering risk limited to the invested amount.
- Accepting a limited number of investing partners.

THIS IS NEITHER AN OFFER TO SELL NOR A SOLICITATION OF AN OFFER TO BUY THE SECURITIES DESCRIBED HEREIN. THE OFFERING IS MADE ONLY BY THE PROSPECTUS THROUGH BONAFIDE RESIDENTS OF ARIZONA.

Public Offering *February 4, 1975*

ARIZONA COMMODITY TRADERS
A Limited Partnership
6730 E. McDOWELL RD. – SUITE 113
SCOTTSDALE, ARIZONA 85257
For Free Prospectus – Call 994-9503



THESE SHINGLES MAKE A GREAT BUILDING

Camelback Professional Building
5051 N. 34th STREET
PHOENIX, ARIZONA 85018
(602) 955-6200

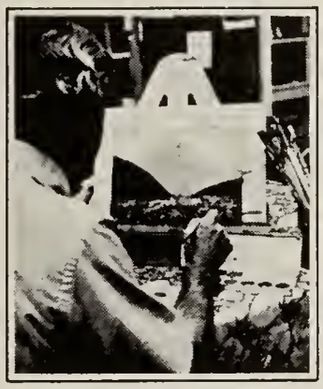
general psychiatry / child psychiatry / psychoanalysis, clinical psychology / and family counseling.

Medical Center X-Ray and Clinical Laboratory

1313 North 2nd Street
Phoenix, Arizona
Phone 258-3484

CLINICAL PATHOLOGY
PORTABLE X-RAY AND E.K.G. SERVICE
DIAGNOSTIC X-RAY
ELECTROCARDIOGRAPHY

R. Lee Foster, M.D., F.A.C.R., F.A.C.P., Director
Diplomates of American Board of Radiology
George B. Kent, Jr., M.D., Consultant Pathologist






a structured program for the patient.

Every detail for the patient's well-being is carefully planned and evaluated in conjunction with his personal physician

CH
camelback hospital
5055 north thirty-fourth street
phoenix, arizona 85018

A NON-PROFIT COMMUNITY PSYCHIATRIC HOSPITAL

Pharmacy Directory

FAIRMONT PHARMACY

AN INDEPENDENT
WITH
CHAIN STORE PRICES

3231 East McDowell Road, Phoenix, Arizona

BRidge 5-5719 **Free Delivery**

FREE RADIO EQUIPPED DELIVERY

In Scottsdale call

Lute's Scottsdale Pharmacy

For

PRESCRIPTIONS

3904 N. Scottsdale Rd. 945-8420 - 945-8429

Next to the 1st National Bank

Open 'til 10 p.m. daily — 9 p.m. Sundays

FREE DELIVERY

CALL

254-2606

IF BUSY CALL 252-1573

"Satisfying Customers Since 1920"

- COSMETICS
- SUNDRIES
- SODA BAR
- LIQUOR

MacALPINE'S DRUG STORE

THE *Rexall* STORE

2303 N. 7th ST.

DON BRISCOE – PHARMACIST



Classified

DANNY T. SEIVERT INSURANCE

Professional Programs for Professional Men

70 E. Mitchell Dr., Suite 6
Phoenix, Arizona 85012
263-9090

JOHNSON-BOZZANI
PORSCHE | AUDI

1976 911, NEW 912E, 914 NOW IN STOCK

DAVE NEAL
SALES & LEASING

320 N. CENTRAL AVENUE
PHOENIX, ARIZONA 85004
PHONE (602) 253-1161





Medical Transcription

MULLEN MEDICAL SERVICE, INC.

4445 North 36th Street
Phoenix, Arizona 85018
Telephone (602) 955-0763

DOCTORS' CENTRAL DIRECTORY

Helen M. Barrasso, R. N., Director

For Emergencies or in Absence of Your Doctor

CALL 327-7471

At Your Service 24 Hours Daily

2807 East Speedway Tucson, Arizona

"Established 1932"

COLLECTION PROBLEMS?

$1.50 per account **including postage** will get your delinquents to pay. Statistical data accumulated since 1967, indicates that 50% of the dollar volume you are now turning in for collection will pay with American Billing Corp mailers. Call: 265-4729 or write to 4014 N. 7th Street, Phoenix, AZ 85014.

NEED SPANISH SPEAKING MEDICAL PEOPLE
NORTHWEST MEDICAL PLAZA
The Dunbar Co., Ltd.
Agent
(602) 264-7582

FOR LEASE
Office Space for Lease — 1411 E. University Drive, Mesa, Arizona. Contact: M. H. Coutu, M.D., 5211 York Road, Helena, Montana 59601 Phone: 406-227-5954.

FOR LEASE
Office for lease, available for immediate occupany. 825 Sq. Ft., fully decorated. "Century Medical Plaza," 1701 W. St. Mary's Road #171. Call 624-5479.

POSITION AVAILABLE
SENIOR PHYSICIAN at the Nevada State Prison, Carson City: Performs professional medical duties and supervises medical technicians. Must possess or be eligible for a license or permit to practice medicine in the State of Nevada. Salary: up to $35,331 for applicants who are Board-eligible in a medical specialty, and up to $32,098 for one year internship in an approved hospital plus three years experience in the practice of medicine. Contact: Donna Green in the Nevada State Personnel Division, Carson City, Nevada.

MESA PROFESSIONAL OFFICE BUILDING
For sale or lease
2,400 sq. ft. of plush interior.
½ acre, zoned C-2.
Great location at major intersection.
Price reduced for quick sale.
Low down payment, with easy terms.
This is the perfect office for you.
Call John White, Owner
833-1234, or 969-1091.

XMAS AND NEW YEAR SPECIAL
For sale by owner, Rancho Solano area custom built, 3-year-old Spanish home on ½ fenced in acre. Corner plot located near all business, shopping and school. Heated pool with Jaccuzzi whirlpool bath. 5 bedrooms, 2½ baths with Roman sunken tub. Dining room, sunken living room, utility room, extremely large kitchen 15 by 20, and family room 15 by 20 with built-in gas Mexican fireplace and Mexican terrazzo tile on floors and 22 ft. cathedral wood ceiling. Price cash to mortgage $99,500. Otherwise $105,000. Call 279-4809, 501 W. Palo Verde Drive, Phoenix. Open house Sat. & Sun. 1 to 5 p.m.

BEAUTIFUL 3.5-ACRE ESTATE
In the heart of Phoenix. 14 rooms, 6 bedrooms, indoor heated swimming pool, shake roof, sunken living room, terrazzo and flagstone floors, fireplace. 50 fruit trees, greenhouse, irrigation for leisure watering, 5 refrigerated apartments, plenty of room to add tennis court and horse facilities. Zoning: R-3. Home-occupation — ideal for doctor office-residence. Room for 50 apartments. For information and appointment to see this unusual property, contact original owner-contractor. Mr. Presmyk, 934-2171.

"HIGH LEVERAGE" and "SPECIAL SITUATIONS"
For the small or large investor.
Fee charged on profits only.
C & H MANAGEMENT, INC.
6730 E. McDowell Rd. — Suite 112
Scottsdale, Arizona 85257
Phone: 994-9501

CASA GRANDE CLINIC
FAMILY PRACTICE AND
GENERAL INTERNISTS NEEDED
$30,000 annually plus all expenses. Full service clinic with selected specialists and correlating staff. Closely affiliated with adjoining fully certified community hospital. Full partnership one year. No limitation on earnings after first year. Average partner nets $40-60,000. Contact J. Lavell Harper, Business Manager or J. T. O'Neil, M.D.

DISSATISFIED WITH MUTUAL FUNDS?
ACT—ARIZONA COMMODITY TRADERS
is a limited partnership comprised of local investors whose combined capital is managed by a firm of professional commodity traders. Registers . . . State of Arizona and Commodity Futures Trading Commission, Washington, D.C. This is neither an offer to sell nor a solicitation of any offer to buy the securities described herein. The offering is made only by the prospectus through bonafide Arizona residents only. Public Offering. February 4, 1975.
ARIZONA COMMODITY TRADERS
6730 E. McDowell Rd. — Suite 113
Scottsdale, Arizona 85257
For Free Prospectus, call 994-9503

Index to Advertisers

Arizona Commodity Traders 70, 73

American Billing Corp. 72

Armour Pharmaceuticals 2

Burroughs Wellcome
Empirin with Codeine 27

Camelback Hospital 71

Camelback Professional Bldg. 70

Classified 72, 73

Doctors Central Directory 72

Eli Lilly
Kefzol 14

HBA Life Insurance 8

Hobby Horse Ranch School 69

Intrav
Alaskan Adventure 4

Johnson Bozzani 72

Medical Bookstore 69

Medical Business Consultants 6

Medical Center X-Ray and Clinical Labs 71

Mullen Medical Service 72

National Casualty Co. 68

Pharmacy Directory 72

Pharmaceutical Manuf. Assoc. 12, 13

Roche Labs
Valium Second Cover, 1
Dalmane 28, 29, 30
Librium Third Cover
Librium Fourth Cover

Roerig & Co.
Antivert 9

Roswell Bookbinding 6

Samaritan Health Service 69

Danny T. Sievert
Insurance 73

Upjohn Co.
E-Mycin 10, 11

Valley National Bank 7

Westwood Pharmaceuticals
Presun 5

Arizona Medicine

85th ANNUAL MEETING
ARIZONA MEDICAL ASSOCIATION
SAFARI HOTEL, SCOTTSDALE

TUESDAY — APRIL 27, 1976

1 P.M. — HOUSE OF DELEGATES AND BLUE SHIELD CORPORATE BODY MEETINGS

WEDNESDAY — APRIL 28, 1976

8 A.M. — REFERENCE COMMITTEE MEETINGS — open to all members
12 NOON — GOLF AND TENNIS TOURNAMENTS
7 P.M. — PAUL SHANK'S FABULOUS STEAK FRYS — steaks, cocktails, fun

THURSDAY — APRIL 29, 1976

7 A.M. — "THE IMPAIRED PHYSICIAN" — a breakfast panel program
9 A.M. — 5 P.M. — 33 SCIENTIFIC PRESENTATIONS FROM WHICH TO CHOOSE (four concurrent sessions all day long)
7 P.M. — ArMPAC RECEPTION
8 P.M. — ArMPAC BANQUET

FRIDAY — APRIL 30, 1976

7 A.M. — "THE MALE MENOPAUSE" — a breakfast panel program
9 A.M. — 5 P.M. — 36 SCIENTIFIC PRESENTATIONS FROM WHICH TO CHOOSE (four concurrent sessions all day long)
7 P.M. — PRESIDENT'S RECEPTION
8 P.M. — PRESIDENT'S BICENTENNIAL BANQUET

SATURDAY — MAY 1, 1976

8 A.M. — HOUSE OF DELEGATES AND BLUE SHIELD CORPORATE BODY MEETINGS

Make Reservations Now!

LIBRARY
U.C. SAN FRANCISCO
MAR 8 1976

ARIZONA MEDICINE

Both often



Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful

respond to one

According to her major
ıptoms, she is a psychoneu-
c patient with severe
iety. But according to the
:ription she gives of her
ings, part of the problem
/ sound like depression.
s is because her problem,
ough primarily one of ex-
ive anxiety, is often accom-
ied by depressive symptom-
ogy. Valium (diazepam)
provide relief for both—as
excessive anxiety is re-
ed, the depressive symp-
s associated with it are also
n relieved.

There are other advan-
:s in using Valium for the
nagement of psychoneu-
c anxiety with secondary
ressive symptoms: the
:hotherapeutic effect of
ium is pronounced and
d. This means that im-
vement is usually apparent
in the patient within a few days rather than in a week or two, although it may take longer in some patients. In addition, Valium (diazepam) is generally well tolerated; as with most CNS-acting agents, caution patients against hazardous occupations requiring complete mental alertness.

Also, because the psychoneurotic patient's symptoms are often intensified at bedtime, Valium can offer an additional benefit. An *h.s.* dose added to the *b.i.d.* or *t.i.d.* treatment regimen can relieve the excessive anxiety and associated depressive symptoms and thus encourage a more restful night's sleep.



Valium® (diazepam) Ⓘⓥ

2-mg, 5-mg, 10-mg scored tablets

in psychoneurotic
anxiety states
with associated
depressive symptoms

eillance because of their predisposi-
to habituation and dependence. In
nancy, lactation or women of child-
ing age, weigh potential benefit
nst possible hazard.

autions: If combined with other psy-
ropics or anticonvulsants, consider
fully pharmacology of agents em-
ed; drugs such as phenothiazines,
otics, barbiturates, MAO inhibitors
other antidepressants may potentiate
ction. Usual precautions indicated in
nts severely depressed, or with latent
ession, or with suicidal tendencies.
Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

YOU ARE THE JUDGE

the evidence is in.

	LETTER® (sodium levothyroxine, Armour) Tablets	SYNTHROID® (sodium levothyroxine)
Sodium levothyroxine:	YES	YES
Less Expensive:	YES*(Costs 10% less)	NO
Potency Coded Tabs:	YES (Armacode®)	NO
Color-Coded Tabs:	YES	YES
Scored Tabs:	YES	YES
7 Tablet potencies:	YES (0.15 mg. is new)	NO

EXHIBIT "A"

Doctor: Please write your verdict.

*American Druggist Blue Book, 1975

LETTER®

(Sodium Levothyroxine, Armour) Tablets

Armour Pharmaceutical Company, Phoenix, Arizona 85077

FEBRUARY 1976 / Vol. 33, No. 2

ARIZONA MEDICINE

JOURNAL OF ARIZONA MEDICAL ASSOCIATION • MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

EDITOR'S PAGE

THE FOREIGN MEDICAL GRADUATE, 96
John W. Kennedy, M.D.

DEAN'S PAGE

THE ELECTIVE PHASE OF THE CURRICULUM, 100
Neal A. Vanselow, M.D.

EDITORIAL

BEAUTY, 114
William B. McGrath, M.D.

NATIONAL HEALTH INSURANCE, 115
William F. Sheely, M.D.

FORCEFUL OPINIONS, 116
Paul B. Jarrett, M.D.

DIRECTORY

Medical Society of the United States and Mexico, 152

Sociedad Medica de Estados Unidos do Northe America y Mexico, 152

Officers and Committees, 152

Index to Advertisers, 168

COVER

The 85th Annual Meeting of the Arizona Medical Association, Inc., April 27 through May 1, 1976.

Published monthly by The Arizona Medical Association, Inc., with offices at 810 W. Bethany Home Rd., Phoenix, Arizona 85013. Subscription $10 a year, single copy $1.00. Second class postage paid at Phoenix, Arizona, and at additional mailing offices.

ORIGINAL ARTICLES

SERIOUS INFECTION AS A COMPLICATION OF ARTERIAL CATHETERIZATION, 89
Peter C. Kelly, M.D.
C. Stephen Cackler, M.D.

MYOCARDIAL INFARCTION SURVEY IN A COMMUNITY HOSPITAL WITH GERIATRIC PROFILE, 91
George Lastnick, M.D.

OBSTETRICS AND GYNECOLOGY

MALE CONTRACEPTION — AN OVERVIEW, 101
N. Burton Attico, M.D., M.P.H.

CLINICAL ONCOLOGY IN ARIZONA

NITROSOUREAS: IMPORTANT NEW DRUGS FOR THE TREATMENT OF CANCER, 102
Sydney E. Salmon, M.D.

SEMINARS IN ENDOCRINOLOGY AND METABOLISM

ANOTHER CLINICAL DILEMMA: DIABETIC NEUROPATHY, 104
Marshall B. Block, M.D.

RADIOLOGY CASE OF THE MONTH

CASE NUMBER 7
John C. Bjelland, M.D.
Irwin M. Freundlich, M.D.

SEMINARS IN CHEST MEDICINE

SURGERY AND THE PATIENT WITH LUNG DISEASE
1. PREOPERATIVE APPRAISAL AND PREPARATION, 110
William C. Weese, M.D.

DEPARTMENT OF HEALTH SERVICES

VENEREAL DISEASE SCREENING ROGRAM, 113
Suzanne Dandoy, M.D.

ARMA MEDICAL HISTORY

GOOD SAMARITAN HOSPITAL HISTORY, 118
Duane Brady

COLONIAL MEDICINE AND BENJAMIN FRANKLIN, 129
Hayes W. Caldwell, M.D.

IN MEMORIAM, 134

E. B. JOLLEY, M.D., 1902-1975

ARMA REPORTS, 139

FUTURE MEETINGS, 148



Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct non-therapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.

P·M·A
Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D. C. 20005

PreSun

(5% PABA LOTION)

may help prevent harmful effects of the sun such as premature aging of skin and skin cancer.*



*Information on file at Westwood Pharmaceuticals Inc

WESTWOOD
PHARMACEUTICALS INC.
Buffalo, New York 14213

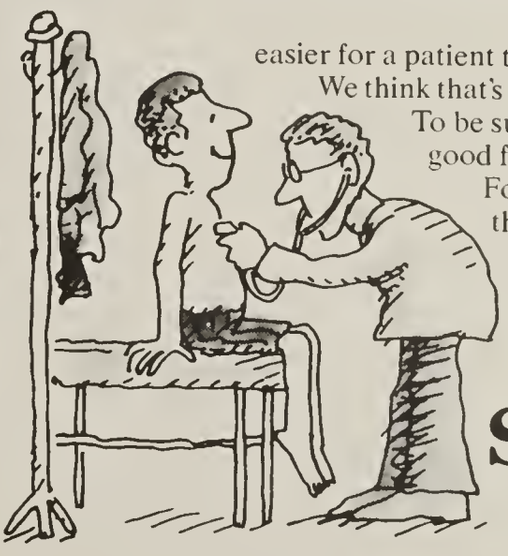
©1974, W. P. Inc.

Saffola® is higher in polyunsaturates than Fleischmann's, Imperial or Mazola.



Shouldn't that difference make a difference in what you recommend?

Your patients on modified fat diets can't do better than Saffola. Of the leading margarines, Saffola is highest in polyunsaturates. And no other margarine is lower than Saffola in saturated fats. Because Saffola contains safflower oil—one of nature's most perfect foods. Safflower oil is higher in polyunsaturates than any vegetable oil, including corn oil. But to your patients, Saffola's good taste is just as important as Saffola's nutrition. The flavor makes it easier for a patient to follow a low cholesterol diet. We think that's why Saffola is worth recommending.



To be sure your patients are eating what's good for them, and enjoying it.

For comparative information about the nutritional benefits of Saffola, write Consumer Products Division, PVO International Inc., World Trade Center, San Francisco, 94111.

Saffola



PRACTICE MANAGEMENT WILL SAVE YOU WORRY AND EXPENSE

Every medical practice *needs* a business manager — but most doctors are so busy serving their patients that they don't have the time to set up an office that runs smoothly and profitably. I can help.



A Naval Academy graduate, I have 30 years of training and experience in business law, electronics, personnel training, and property management. My associates were major consultants for NASA's medical facility for Apollo missions.

You will benefit from our knowledge of office staffing and equipment, fee structure, billing collections, office partnerships and liability protection.

Let us survey your procedures and show you how to save time, worry and expense. First talk at no obligation to you.

MEDICAL BUSINESS CONSULTANTS
Philip Kwart, *Director*
3225 North Central Avenue, Suite 300-B
Phoenix, Arizona 85012 Phone (602) 264-3803

WE BIND YOUR PERIODICALS

Preserve your reference journals as beautifully Bound Books. Choose from 30 different colors of durable Library Buckram or Imitation Leather.

$8.50 per volume, including name imprint

Inquire about quantity discounts.

Free local pick up and delivery on 10 volumes or more.

ROSWELL BOOKBINDING

2614 North 29th Avenue
PHOENIX, ARIZONA 85009
272-9338

ARIZONA MEDICINE

Address all correpondence to the
Journal Offices
810 W. Bethany Home Rd.,
Phoenix, Arizona 85013

Bruce E. Robinson
Business Manager

National Representative
John Murphy
State Medical Journal
Advertising Bureau, Inc.
711 South Boulevard
Oakpark, Illinois 60302

"The material in this journal is not copyrighted. We ask that anyone using material from it note the previous publication in ARIZONA MEDICINE."

CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

1. Manuscripts, including references or bibliography, should be typewritten, double-spaced, on one side of the paper only, and the original and a carbon enclosed.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

5. The Journal reserves the right to edit all material.

6. Reprints will be supplied to the author at printing cost.

DYAZIDE®

Trademark

Each capsule contains 50 mg. of Dyrenium® (triamterene, SK&F) and 25 mg. of hydrochlorothiazide.

MAKES SENSE

TRIAMTERENE CONSERVES POTASSIUM WHILE HYDROCHLOROTHIAZIDE LOWERS BLOOD PRESSURE

FOR LONG-TERM CONTROL OF HYPERTENSION*

Serum K^+ and BUN should be checked periodically. (See Warnings Section.)



Before prescribing, see complete prescribing information in SK&F literature or *PDR*. The following is a brief summary.

* **Warning**
This fixed combination drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

***Indications:** *Edema:* That associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. *Mild to moderate hypertension:* Usefulness of the triamterene component is limited to its potassium-sparing effect.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: **Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired.** Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 capsules; in Single Unit Packages of 100 (intended for institutional use only).

SK&F Co., Carolina, P.R. 00630
Subsidiary of SmithKline Corporation

Effectiveness across the spectrum of most common forms of insomnia

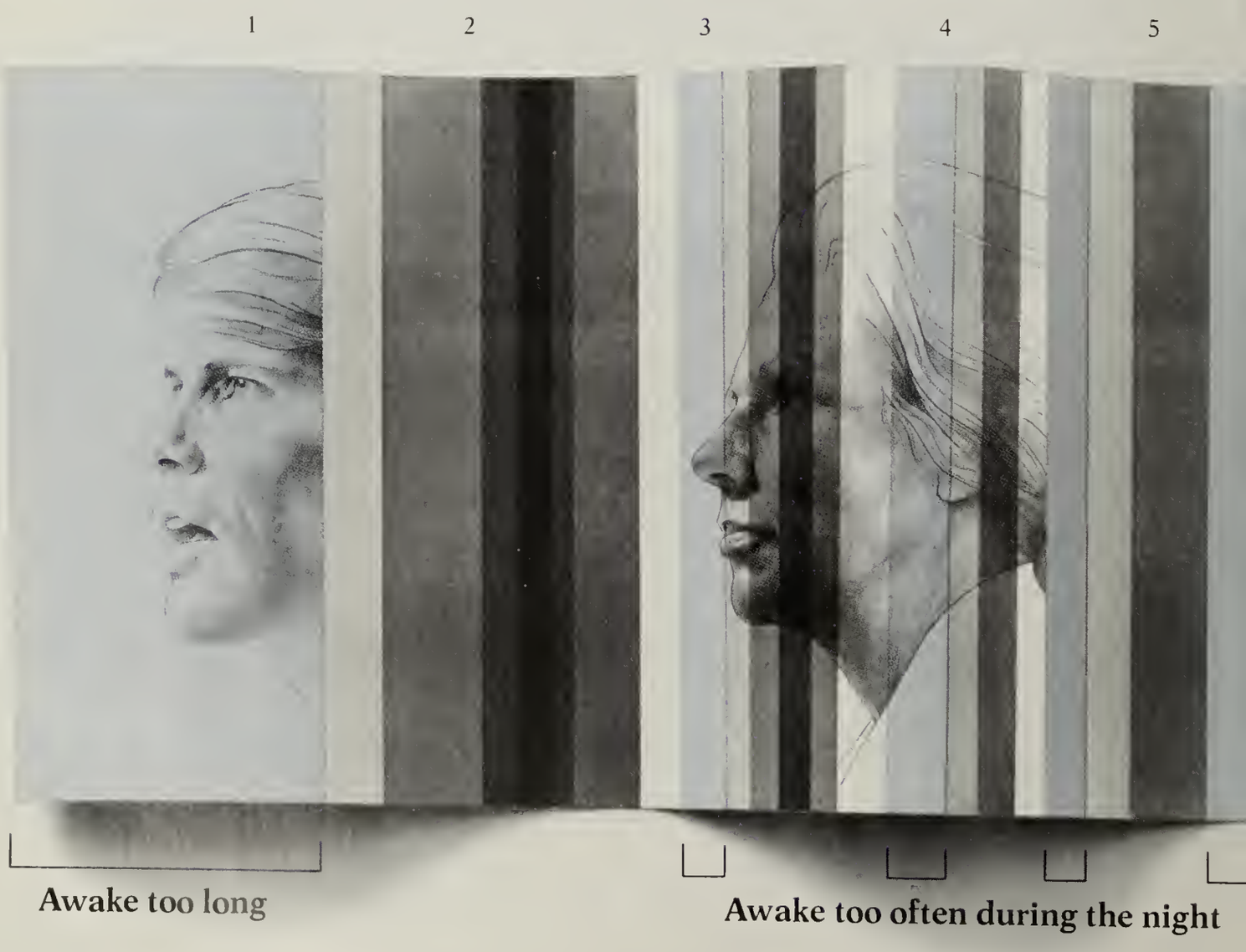
Awake too long, awake too often, awake too early...

These are the most common forms of insomnia, and may occur singly or in any combination. The night of troubled sleep depicted here comprises all three types. As the night progresses from left to right, each sleep stage is identifiable by its own shade of gray. Blue represents "Awake."

As you can see, this hypothetical "patient" takes well over an hour to fall asleep, awakens several times during the middle of the night and awakens too early in the morning.

Sleep Stages

- Awake
- REM
- Stage 1
- Stage 2
- Stage 3
- Stage 4



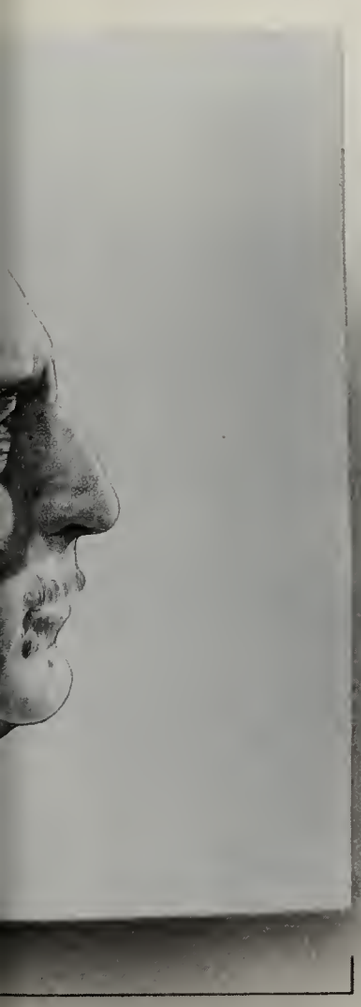
The insomnias most often occurring in young and older adults

For patients with trouble falling asleep (common in young adult insomnia patients), Dalmane (flurazepam HCl) 30 mg provides sleep within 17 minutes, on average. For those with trouble staying asleep or sleeping long enough (common in those over 50), Dalmane offers increased total sleep time with fewer nocturnal awakenings. These clinical results were demonstrated in studies conducted in four geographically separated sleep research laboratories[1-4]

The relative safety of Dalmane (flurazepam HCl) is well documented

Dalmane (flurazepam HCl) is relatively safe and well tolerated; morning "hang-over" has been infrequent. The usual adult dosage is 30 mg; in elderly or debilitated patients, limit initial dosage to 15 mg to preclude over-sedation, dizziness or ataxia. Caution patients about possible combined effects with alcohol and other CNS depressants.

Broad-spectrum medication for the most common forms of insomnia



Awake too early



Dalmane®
(flurazepam HCl)

One 30-mg capsule *h.s.*— usual adult dosage
(15 mg may suffice in some patients).
One 15-mg capsule *h.s.*— initial dosage for elderly or debilitated patients.

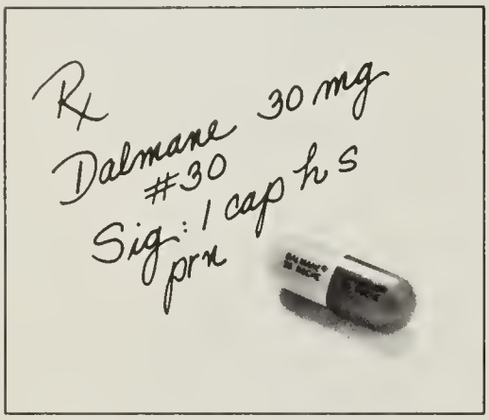
- ☐ induces sleep rapidly
- ☐ reduces nighttime awakenings
- ☐ lengthens total sleep time

ROCHE

Please see following page for a summary of complete product information.

Broad-spectrum medication for the most common forms of insomnia

Dalmane®
(flurazepam HCl) Ⓒ IV



Objectively proved in the sleep research laboratory, Dalmane

- □ induces sleep within 17 minutes, on average
- □ reduces nighttime awakenings
- □ provides 7 to 8 hours sleep, on average, without repeating dosage

Before prescribing Dalmane (flurazepam HCl), please consult complete product information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

Contraindications: Known hypersensitivity to flurazepam HCl.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity, have also been reported in rare instances.

Dosage: Individualize for maximum benefi effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

REFERENCES:

1. Karacan I, Williams RL, Smith JR: The sleep laboratory in the investigation of sleep and sleep disturbances. Scientific exhibit at the 124th annual meeting of the American Psychiatric Association, Washington DC, May 3-7, 1971

2. Frost JD Jr: A system for automatically analyzing sleep. Scientific exhibit at the 24th Clinical Convention of the American Medical Association, Boston, Nov 29-Dec 2, 1970; and at the 42nd annual scientific meeting of the Aerospace Medical Association, Houston, Apr 26-29, 1971

3. Vogel GW: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ

4. Dement WC: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ



ROCHE

ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

Famous Fighters



NEOSPORIN® Ointment
(polymyxin B-bacitracin-neomycin)
is a famous fighter, too.

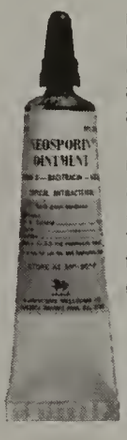
Provides overlapping, broad-spectrum antibacterial action to help combat infection caused by common susceptible pathogens (including staph and strep).

Each gram contains: Aerosporin® brand Polymyxin B Sulfate 5,000 units; zinc bacitracin 400 units; neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

INDICATIONS: Therapeutically (as an adjunct to systemic therapy when indicated) for topical infections, primary or secondary, due to susceptible organisms, as in: • infected burns, skin grafts, surgical incisions, otitis externa • primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection.

Prophylactically, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing. **CONTRAINDICATIONS:** Not for use in the eyes or external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of the components. **WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended. **PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs. **ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.



Wellcome

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Kefzol®
cefazolin sodium

Ampoules, equivalent to 250 mg., 500 mg., 1 Gm., and 10 Gm. of cefazolin



Lilly

Additional information available to the profession on request.
Eli Lilly and Company
Indianapolis, Indiana 46206

600062

SERIOUS INFECTION AS A COMPLICATION OF ARTERIAL CATHETERIZATION

PETER C. KELLY, M.D.
C. STEPHEN CACKLER, M.D.

The following articles serves all of us as a reminder that any "invasive" procedure carries with it the possibility of serious morbidity. Although, statistically, arterial catheterization seems to be an innocuous procedure, potential complications should always be anticipated and decisions regarding "when to do" and for "how long" must always take these into consideration.

Infectious complications of intravenous plastic catheters are relatively frequent and extensively described in the medical literature. In contrast, the infectious hazards of intra-arterial catheters are infrequent and not fully described. We report a case of severe local and systematic gram negative bacillary infection as a result of an indwelling teflon arterial catheter.

Case Report: A 56-year-old white female presented to the Emergency Room unconscious without vital signs after consuming an undetermined amount of sedative drugs. She was intubated and placed on a mechanical ventilator. Central venous and peripheral arterial pressures were monitored via indwelling catheters. The arterial catheter was a 20 gauge 3.2 cm long (1¼-inch) telflon device. Treatment with intravenous fluid, furosemide and dopamine restored the blood pressure and pulse.

On the third hospital day mechanical ventilation was discontinued and the vital signs were stable.

On the fourth hospital day the temperature rose to 40.6°C (105°F) rectally and transient

From: Dept. of Medicine, Maricopa County General Hospital, Phoenix, AZ. Reprint requests to 2601 E. Roosevelt (Dr. Kelly).

hypotension occurred. The arterial catheter site on the right wrist showed blanched skin proximal to the puncture wound and erythema over the entire medial aspect of the arm. The arterial catheter was removed and cultures from the site grew *Klebsiella* species and a penicillinase producing *Staphylococcus aureus*. Two blood cultures grew *Klebsiella* species. The central venous catheter was removed, cultured and found to be sterile. Antibiotic therapy with cephalothin and gentamicin was initiated on the fourth hospital day. Oxacillin was substituted for cephalothin on the sixth hospital day and combined therapy was continued until the seventeenth hospital day.

Crepitation of the right forearm was observed on the 7th hospital day, and an x-ray showed gas in the soft tissue (figure 1). Surgical exploration showed necrotic skin which contained numerous gram negative rods. Cultures obtained at surgery grew *Klebsiella* species, enterococci and *Staphlococcus epidermidis*.

On the 11th hospital day inspection of the surgical incision showed brown, foul-smelling muscle and tendons. Necrotic forearm muscles, tendons and soft tissues were resected in the operating room. Following debridement the forearm gradually healed.

At present, the patient has severe functional impairment of the right forearm and hand. Further surgical procedures are planned to improve flexor function.



Figure 1
Serious infection

COMMENT

Indwelling arterial catheters are used in seriously ill patients to provide accurate measurement of arterial pressures and easy access for blood gas determinations. Occlusive complications are infrequent and infections are rare. A recent prospective study of 536 arterial catheterizations in 531 patients reports 3 instances of arterial occlusion requiring thrombectomy and no infections.[1] One serious local staphylococcal infection occurred among 328 patients who had retrograde arterial catheterization at the Mayo Clinic.[2]

Our patient's illness has features that deserve further comment. First, the duration of catheterization was longer than necessary for monitoring arterial pressure and/or obtaining samples for blood gas measurements. The infection might have been prevented entirely or modified in severity if the catheter was removed earlier. Prospective studies of intravenous catheterizations clearly show that bacterial colonization and local infection are directly proportional to length of catheterization.[3,4] Bacterial colonization of arterial catheters occurred in 8 (4%) of 200 patients. Seven of the eight colonized patients had catheters in place for more than 48 hours.[1]

Second, the morbidity in our patient resulted from the destructive effects of the infection in the forearm. Indeed, the local infection progressed while appropriate antibiotics were administered. Extensive surgical resection was required for adequate control of the infection, and additional surgery will be necessary to restore function.

Nonproprietary Names and Trademarks of Drugs

Furosemide	Lasix
Dopamine	Intropin
Cephalothin	Keflin
Gentamicin	Garamycin
Oxacillin	Bactocill

REFERENCES

1. Gardner, F. M.; Schwartz, R.; Wong, H.; Burke, J. P.: Percutaneous Indwelling Radial Artery Catheters for Monitoring Cardiovascular Function. N. Engl. J. Med. 290: 1227-1231, 1974.
2. Campion, B. C.; Frye, R. L.; Pluth, J. R.; Fairbairn, J. F.; Davis, G. D.: Arterial Complications of Retrograde Brachial Arterial Catherization. Mayo Clin. Proc. 46: 589-592, 1971.
3. Norden, C. W.: Application of Antibiotic Ointment to the Site of Venous Catheterization — a Controlled Trial. J. Infec. Dis. 120: 611-615, 1969.
4. Collins, R. N.; Braun, P. A.; Zinner, S. H.; Kass, E. H.: Risk of Local and Systematic Infection with Polyethylene Intravenous Catheters. N. Engl. J. Med. 279: 340-343, 1968.

MYOCARDIAL INFARCTION SURVEY

IN A COMMUNITY HOSPITAL WITH GERIATRIC PROFILE

GEORGE LASTNICK, M.D.

This presentation provides information regarding the extent and characteristics of myocardial infarction (MI) in a community whose population is limited to the older age group. Because the frequency of coronary artery disease increases with age, the predominantly geriatric population incurred a large number of MIs during the one-year study period. Future reports from other retirement communities may be compared with some of these findings.

ABSTRACT

One hundred thirty-eight patients were hospitalized for myocardial infarction (MI) at Walter O. Boswell Memorial Hospital, Sun City, Arizona, in 1973. The male-female ratio was over 2:1, and the survivors-nonsurvivors ratio was about 3:1. The greatest number of MIs occurred in the seventh decade (60-69 years) of life, and the most common location was the inferior wall (alone or in multiple combinations). The highest mortality occurred in older groups and in subjects with greater serum enzyme levels. High weight, smoking, hypertension, diabetes mellitus, and high serum cholesterol did not seem to influence significantly the survival rate.

From: Walter O. Boswell Memorial Hospital, Sun City, AZ. Reprint requests to 10228 Coggins Drive, Sun City, AZ 85351 (Dr. Lastnick)

This communication concerns 138 patients with proven acute myocardial infarction (MI), admitted to Walter O. Boswell Memorial Hospital in Sun City, Arizona in 1973. Walter O. Boswell Memorial Hospital is an acute medical surgical center with emphasis on geriatric care, designed to serve the health needs of Sun City and the surrounding communities. The hospital had a 133-bed capacity in 1973. Sun City is an active retirement resort community. In 1973 the average age of the population was over 65. At the end of 1973 the Sun City population numbered 30,000.

The criteria for the diagnosis of acute MI were the history of chest pain and characteristic electrocardiographic (ECG) changes and/or serum enzyme abnormalities and/or autopsy report of recent myocardial infarction. Diagnoses were made by the attending physicians, but all clinical data, ECG, and serum enzyme abnormal findings were critically reviewed by the author. The study was concerned with the incidence of myocardial infarction in connection with age, sex, number of MIs, ECG location of MI, serum enzyme pattern, smoking habits, history of hypertension, weight pattern, history of diabetes, and serum cholesterol level among survivors and nonsurvivors.

METHODS AND MATERIALS

With the cooperation of the Medical Records Department of Walter O. Boswell Memorial Hospital, the hospital records of all the patients admitted to Walter O. Boswell Memorial Hospital from January 1, 1973 to December 31, 1973 were obtained and reviewed.

The 138 patients accepted in this study in the category of acute myocardial infarction group met one or more of the following diagnostic criteria: 1) unequivocal ECG changes of acute

M.I. (progressive ST depressions and T wave changes and development of abnormal Q and Q-S changes) with or without typical history of chest pain; 2) equivocal ECG changes of acute MI (nonspecific ST segment and/or T wave changes) with or without typical history of chest pain, with abnormally high serum enzyme levels; 3) typical history of chest pain with abnormally high serum enzymes levels and nondiagnostic ECG; or 4) autopsy evidence of recent MI (modified criteria used by Sloman et al[1] and Hill et al[2] in their studies).

Lactic dehydrogenase (LDH) levels greater than 195 units, in the absence of connective tissue diseases, hematologic and hematopoietic diseases, diseases of the liver, emboli and carcinoma, were considered as abnormally high. Creatinine phosphokinase (CPK) levels greater than 50 units, in the absence of injury of the muscles, connective tissue diseases, and brain infarctions, were considered as abnormally high. The LDH levels (normal 0-195) were determined by the method of Wroblenski and the CPK levels (normal 0-50) were determined by the method of Szasz.

The criteria used to select the patients in the hypertensive group were: 1) history of hypertension treated with antihypertensive drugs at the time of the admision to the hospital or 2) unequivocal diagnosis of hypertension established during the hospitalization.

The following criteria were used for the patients accepted in the diabetic group: 1) history of diabetes mellitus, treated with diet and/or antidiabetic drugs, at the time of the admission to the hospital or 2) unequivocal diagnosis of diabetes mellitus, established during the hospitalization. The serum glucose levels were determined by the Hexokinase method.

The serum cholesterol level was determined by the Lieberman Burchard method, without extraction.

The adjusted desirable weights for men and women from the Merck Manual (Twelfth Edi-

Table 1
Number of Patients with Acute MI Surviving and Not Surviving by Age and Sex Distribution

Ages:	Total	Under 40	40-49	50-59	60-69	70-79	Over 80
Total	138	1	2	16	69	41	9
Survivors	103	1	2	14	54	27	5
Non-Survivors	35	0	0	2	15	14	4
Men	96	1	2	14	47	27	5
Survivors	75	1	2	12	37	20	3
Non-Survivors	21	0	0	2	10	7	2
Women	42	0	0	2	22	14	4
Survivors	28	—	—	2	17	7	2
Non-Survivors	14	—	—	0	5	7	2

Table 2A
Number of Patients with Acute MI Surviving and Not Surviving by Sex Distribution

				Survivors			Non-Survivors		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
First	94	64	30	72	52	20	22	12	10
Second	32	26	6	24	20	4	8	6	2
Third	10	4	6	7	3	4	3	1	2
Fourth	1	1	0	0	—	—	1	1	0
Fifth	1	1	0	0	—	—	1	1	0

Table 2B
Number of Patients with Acute MI Surviving and Not Surviving by Age Distribution

Ages				Under 40			40-49			50-59			60-69			70-79			Over 80		
	T	S	D	T	S	D	T	S	D	T	S	D	T	S	D	T	S	D	T	S	D
First	94	74	22	1	1	0	1	1	0	12	11	1	45	36	9	29	19	10	6	4	2
Second	32	24	8	0	—	—	1	1	0	4	3	1	17	13	4	9	7	2	1	0	1
Third	10	7	3	0	—	—	0	—	—	0	—	—	6	5	1	3	1	2	1	1	0
Fourth	1	0	1	0	—	—	0	—	—	0	—	—	0	—	—	0	—	—	1	0	1
Fifth	1	0	1	0	—	—	0	—	—	0	—	—	1	0	1	0	—	—	0	—	—
Totals by Ages				1	1	0	2	2	0	16	14	2	69	54	15	41	27	14	9	5	4

T = Total
S = Survivors
D = Dead

tion) was used to calculate the weight index.

The chi-square test was used to detect statistically significant relationships between variables in this study.

RESULTS

AGE AND SEX (Tables 1, 2A, 2B). In the twelve months under review, 138 patients were admitted to Walter O. Boswell Memorial Hospital in Sun City, Arizona, with a diagnosis of acute MI.

There were 103 survivors and 35 nonsurvivors in this series. Ninety-six patients were males and 42 were females. Seventy-five (78.1%) survived and 21 (21.9%) died in the male group, and 28 (66.7%) survived and 14 (33.3%) died in the female group.

The 138 patients were divided into 10 year age groups: under 40 years, 40-49, 50-59, 60-69, 70-79, and over 80 years. Sixty-nine patients were in the 60-69 years group; 41 patients were in the 70-79 years group. The 50-59 years group had 16 patients; the over 80 years group had 9 patients; the 40-49 years group had 2 patients and the under 40 year group had only one patient with acute MI.

In this series 94 patients were admitted with a first MI; 32 patients had a second MI at the time of their hospitalization; and 10 patients were hospitalized with a third MI. One patient had the fourth MI and another patient had the fifth MI at the time of admission to the hospital.

ECG LOCATION OF MI (Table 3). One hundred eleven (83.4%) patients had ECG changes of acute MI of the inferior wall, alone and in different combinations (multiple sites); 87 (78.4%) patients in this group survived. Seventy-five (54.3%) patients exhibited ECG patterns of the lateral wall location of the MI alone and in different combinations (multiple sites), and 61 (81.3%) survived. Sixty (43.4%) patients had anterior wall location of the MI alone and in different combinations (multiple sites). There were 42 (70%) survivors in this group. Twenty-five (18.1%) patients had ECG changes consistent with septal wall involvement, alone and in different combinations (multiple sites), and 15 (60%) survived. These findings suggests a slight significant relationship between surviving and ECG location of MI ($p<.10$), with differences being about the same across locations.

Table 3
Number of Patients Surviving and Not Surviving by ECG Location of MI (Alone and Combined)

	I	A	L	S
Total	111	60	75	25
Survivors	87	42	61	15
Non-Survivors	24	18	14	10

A = Anterior
I = Inferior
L = Lateral
S = Septal

SERUM ENZYME PATTERN (Table 4). The CPK pattern was studied in 104 patients and the LDH in 25 patients. (In the LDH group, the CPK values were not obtained.) In 9 patients, the serum enzymes were not determined.

In the CPK group, 42 (40.4%) patients of the total of 104 patients had less than 200u, 30 (28.8%) had 200-500u, 23 (22.1%) had 500-100u, and 9 (8.7%) had over 1000u.

In the 25 patients included in the LDH group, 5 (20%) subjects had less than 500u, 11 (44%) had 500-1000u, 7 (28%) had 1000-2000u, and 2 (8%) had more than 2000u.

The CPK pattern showed a significant relationship with surviving ($p=.025$) indicating that the death rates were the highest in subjects with higher CPK values. There were not sufficient data to test the LDH group pattern for statistical significance.

Table 4
Number of Patients with Acute MI Surviving and Not Surviving by Serum Enzyme Pattern

	Total	Survivors	Non-Survivors
CPK			
Under 200	42	36	6
200-500	30	26	4
500-1000	23	19	4
Over 1000	9	4	5
LDH			
Under 500	5	4	1
500-1000	11	11	0
1000-2000	7	3	4
Over 2000	2	0	2
Not known	9	–	–

SMOKING HABITS (Table 5). Smoking habits were determined in 115 patients. Forty-one patients were identified as being smokers, and

Table 5
Number of Patients with Acute MI Surviving and Not Surviving by Smoking Habits

	Smokers	Non-Smokers	Not known
Total	41	74	23
Men	28	54	14
Women	13	20	9
Survivors	35	57	11
Men	24	43	8
Women	11	14	3
Non-Survivors	6	17	12
Men	4	11	6
Women	2	6	6

74 non-smokers. The male patients represented more than twice the number of female patients in the smoking and non-smoking groups. The survivors-nonsurvivors ratio was more than 3:1 in both smoking and non-smoking groups.

HISTORY OF HYPERTENSION (Table 6). There were 113 (81.9%) normotensive and 25 (18.1%) hypertensive patients in the series, yielding 72.6% survivors for the normotensive group and 84% survivors for the hypertensive group. There were more than twice as many normotensive and hypertensive males as there were female counterpart, in this survey.

Table 6
Number of Patients with Acute MI Surviving and Not Surviving by History of Hypertension

	Hypertensive	Normotensive
Total	25	113
Men	17	79
Women	8	34
Survivors	21	82
Men	17	58
Women	4	24
Non-Survivors	4	31
Men	0	21
Women	4	10

WEIGHT PATTERN (Table 7). The weight index was determined in 122 patients. Seventy-eight (63.9%) were in the normal and low weight group and 44 (36.1%) were in the high weight group. The patients with normal or low weight index had 60 (76.9%) survivors. The high weight group had 37 (84.1%) survivors.

Table 7
Number of Patients with Acute MI Surviving and Not Surviving by Weight Pattern

	Overweight	Normal or Underweight	Not known
Total	44	78	16
Men	32	57	7
Women	12	21	9
Survivors	37	60	6
Men	27	44	4
Women	10	16	2
Non-Survivors	7	18	10
Men	5	13	3
Women	2	5	7

HISTORY OF DIABETES (Table 8). There were almost six times as many nondiabetic patients (118) as diabetic patients (20) in our study.

Table 8
Number of Patients with Acute MI Surviving and Not Surviving by History of Daibetes Mellitus

	Total	Survivors	Non-Survivors
Yes	20	14	6
No	118	89	29

The survival rate was 70% (14 patients) for the diabetic group and 75.4% (89 patients) for the nondiabetic group.

CHOLESTEROL LEVEL (Table 9). The serum cholesterol level (per 100ml) was determined in 124 patients, who were divided into four groups: less than 150 mg., 150-250 mg., 250-350 mg., and over 350 mg.; 79 (63.7%) patients were included in the 150-250 mg. group; and 45 (36.3%) patients comprised the 250-350 mg. group. There were 61 males and 18 females in the first group, and 26 males and 19 females in the second group. In the 150-250 mg. group 65 (82.3%) patients survived. In the 250-350 mg. group, 34 (75.6%) patients survived.

Table 9
Number of Patients with Acute MI Surviving and Not Surviving by Serum Cholesterol Level

Levels	0-150	150-250	250 350	Over 350	Not known
Total	0	79	45	0	14
Men	–	61	26	–	9
Women	–	18	19	–	5
Survivors	0	65	34	0	4
Men	–	51	21	–	3
Women	–	14	13	–	1
Non-Survivors	0	14	11	0	10
Men	–	10	5	–	6
Women	–	4	6	–	4

COMMENT

The seope of the present survey was to investigate the multivariate relationship between myoeardial infaretion and different risks faetors, ineluding age, sex, ECG loeation of the MI, serum enzymes, smoking habits, hypertension, weight, diabetes, and serum eholesterol and their ultimate impaet eoneerning survival and death, in a group of patients with geriatrie profile. Analysis of the data revealed some interesting findings.

There were more than twiee as many men (69.6%) as women (30.4%) in the study. These findings eoneurred with those of Most and Peterson[3] who had 985 (67.3%) men and 428 (32.7%) women in their study, and Sloman and Brown[1] who had 182 (65.5%) men and 96 (34.5%) women in their studies. In a eomparable study done by Lin et al,[4] the male:female ratio was 4.3:1.

The survival rate (74.6%) in this series is eomparable with the rates reported by some of the previous authors (Most and Peterson[3] 69.2% survival rate in 1463 subjeets; Sloman and Brown 76% survival rate in 278 subjeets.)

It is worthwhile to mention that in Most and

Peterson's study, the patients in the over 60 year age group constituted 83.6% of all the patients, while in our study 86.24% of all the patients were in the over 60 year age group.

The highest incidenee of MI was in the 60-69 year age group (50% of all the patients). As expeeted, the rate of survival decreased with age, in both males and females, but the male group had about three times as many survivors as nonsurvivors, whereas the female group only had about twice as many survivors as nonsurvivors.

With regard to the ECG location of the MI, the largest number of myoeardial infarctions oceurred in the subjeets with inferior wall loeation, alone and in multiple combinations (multiple sites). Bengtsson et al[5] indieated in their Goteborg report that the anterior and posterior walls seemed to be affeeted with the same frequency in their series of female subjeets with aeute MI ineluded in their study.

As expeeted, the highest rate of survival was found in those patients who had lower serum enzyme values. In this study out of 115 patients whose smoking habits were identified, 64.4% were nonsmokers. In both groups, smokers and nonsmokers, there were more than three times as many survivors as nonsurvivors. We could not draw any valid eonelusion eoneerning the relationship between smoking and MI, beeause we did not determine the previous smoking habits of the subjeets in the non-smoking group and we did not appraise the average number of eigarettes smoked every day by the patients in the smoking group.

Hypertension did not seem to influenee the survival rate. Over 80% of the patients in our study were normotensive; 84% of all the patients survived in the hypertensive group, and 72.6% survived in the normotensive group. All hypertensive males in this series survived ($p<.025$). John M. Chapman et al[6] showed in a 15-year follow-up study of white males in Los Angeles, that hypertension did not have any bearing on the appearanee and incidence of MI in that group. It is of interest that all four nonsurvivors in the hypertensive groups were female patients. Bengtsson et al[5] indicated in their study that women with hypertension had a higher ineidence of MI than the general population.

There were almost twice as many subjects with normal and low weight as those with high weight. No signifieant relationship was established between survival, nonsurvival, and weight index. Chapman, et al,[6] indieated in the Los Angeles study, that high weight appeared to be a significant risk faetor in the oeeurrenee of MI only among the 30 to 39 year old males, but no tfor older men.

In this series of patients, the survival rate did not seem to be influenced by the presence of diabetes mellitus. Bengtsson et al[5] reported that the incidenee of diabetes mellitus was higher in their female subjects with acute MI than in the general population.

There was no definite relationship between the serum eholesterol values of our patients, and the survival rate. In the Los Angeles study,[6] high serum eholesterol levels were assoeiated with increase risks of MI in white men younger than 50, while in the over 50 year old subjeets high serum eholesterol levels did not increase the risks of MI. No relationship between high serum eholesterol values and MI was found in the Goteborg[5] study.

ACKNOWLEDGEMENT

I wish to thank Walter W. Sittler, M.D. for his advice in evaluating a number of ECG traeings; Alan B. Humphrey, Ph.D. University of Arizona of aiding in the statistieal analyses; Carl Wellish, M.D. for his adviee in editing this manuseript; Mrs. E. Zakrajsek, R.R.A., Mrs. L. Pomeroy, Mrs. S. Christopher and Mr. L. W. Peterson for their help in the preparation of this paper; the Administration, the staffs of the Medieal Record Dept. and the Clinical Laboratory, the Women's Auxiliary of Walter O. Boswell Memorial Hospital, and the staff of the Maricopa Medieal Library, for eontinuous eooperation. The tables were executed by Mrs. L. Pomeroy.

REFERENCES

1. Sloman, G.; Brown, R.: Hospital Registration in Patients with Acute Myocardial Infarction. Am. Heart J. 79:761-768 (June) 1970.

2. Hill, D. E. et al: Specialized Care for Acute Myocardial Infarction. Minnesota Medicine 56:983-989 (November) 1973.

3. Most, A. S.; Peterson, D. R.: Myocardial Infarction Surveillance in a Metropolitan Community. JAMA 208:2433-2438 (June 30) 1969.

4. Lin, T. K. et al: Myocardial Infarction in Kaiser Hospital, Honolulu (1959-1967) – A Long Term Analysis. Hawaii Med. J. 31:257-261 (July-August) 1972.

5. Bengtsson, C. et al: Ischemic Heart Disease in Women. Acta Med. Scand. Suppl. 549, 1973.

6. Chapman, J. M. et al: The Differential Effect of Serum Cholesterol, Blood Pressure and Weight on the Incidence of Myocardial Infarction and Angina Pectoris. J. Chronic Dis. 23:631-645, 1971.

THE FOREIGN MEDICAL GRADUATE

JOHN W. KENNEDY, M.D.



At a recent forum sponsored by The Board of Medical Examiners and the Arizona Medical Association a galaxy of erudite authorities were on hand to discuss this problem which is now of concern nation wide.

Dr. Richard L. Dexter, President of the Arizona Board of Medical Examiners presided and pointed out the concern with which the Arizona Board views this problem and the necessity of the public and physicians to have some factual knowledge.

Dr. C. H. William Ruhe, secretary, Council on Medical Education of the AMA began by defining the term and the various classifications of Foregin Medical Graduates. This excludes all graduates of medical schools in the United States and Canada as all of these schools are accepted and accredited on the same standards. There are many different classes of individuals who obtain their education at foreign schools, of which there are about eight hundred, and this includes the U.S. citizen who may attend a foreign school. Others may be English or non-English-speaking, they come from a wide variety of cultural national groups, and there is a wide variation of types of medical school. The majority of FMG's do not have an M.D. degree in the sense in which it is awarded here in this country, but this may not indicate the level of attainment of medical knowledge. The fact that he or she may or may not have an M.D. degree may be entirely irrelevant to his medical qualifications.

There are fifty-five licensing jurisdictions in the United States, some of the FMG's may be ECMG certified, some are not, some are board eligible, some may have as many as three to five years post-graduate training. As many as 25% of the FG's are board certified, they may seek admission via the educational route in which they come under the category of exchange students, and they may change course in the middle of the stream and elect to stay entering as physicians; or they may initially apply under the quota system from their own country of origin.

There may be as many as ten thousand FMG's in the United States who are not now engaged in any portion of the health field. As to the future, the FMG's are here to stay as many as 20% of all of the U.S. physicians are at present FMG's, 30 to 33% of the interns and residents are FMG's but now there is probably a slow decline. Forty-six percent of the interns and residents in 1972 were FMG's, in 1974 it was estimated that 39% were FMG's, some of this may reflect simply the fact that there are more U.S. graduates, not fewer FMG's.

In fifteen states as many as 40% applying for licensure are FMG's, in five states 75% are FMG's.

Editor's Page

EDITOR-IN-CHIEF
John W. Kennedy, M.D.*
ASSOCIATE EDITOR
William B. McGrath, M.D.*
EDITORIAL ASSISTANT
Joan Bruner

EXECUTIVE DIRECTOR AND MANAGING EDITOR
Bruce E. Robinson

EDITORIAL BOARD
Robert Barbee, M.D.
Marshall B. Block, M.D.
M. David Ben-Asher, M.D.
Andre J. Bruwer M.D.
Melvin L. Cohen, M.D.
Arthur V. Dudley, Jr., M.D.
Walter V. Edwards, Jr., M.D.*
C. Herbert Fredell, M.D.
Kenneth E. Johnson, M.D.
Gerold Kaplan, M.D.*
George Lastnick, M.D.*
Robert F. Lorenzen, M.D.
Darwin W. Neubauer, M.D.
Stanley H. Nordmo, M.D.*
David Pent, M.D.*
Donald A. Polson, M.D.
William F. Sheeley, M.D.
Michael L. Schreiber, M.D.*
Maurice L. Sievers, M.D.
Paul L. Singer, M.D.
Ernest Smith, M.D.
David C. H. Sun, M.D.*
Eleanor A. Waskow, M.D.
*Publishing Committee

And just when you get steamed up thinking about this and decide they should be shut off completely, remember that 50% of the U.S. Nobel Laurets are FMG's.

There is a world-wide travel and shift of educated, well trained persons from underdeveloped to developed countries.

This then has given rise to the push and pull analysis of the problem. Highly qualified or ambitious individuals are pushed out of their home country by the lack of opportunity, lack of educational opportunities and for economic reasons.

They are pulled to developed countries and in this instance, principally the United States for many reasons. First of all, until now, there has been a special preference to physicians in the immigration quota in that the Labor Department has ruled that there is a "shortage" of physicians. The second great pull factor is that residency training in the United States is the best in the world and there are vacancies, or have been up until recently. The third factor that the E.C.F.M.G. examination is given around the world and this encourages people to take the examination in their local country and prepare themselves for the journey to the land of milk and honey, the U.S.

But there are some changing trends and attitudes. There is a growing hostility by the public against the FMG and there is a surplus of U.S. applicants to medical schools. Now although these two factors are not closely related, in the public's mind the two are related and the fact that you cannot get in a medical school in the United States leaves some to wonder why we should accept so many Foreign Medical Graduates. Especially when thousands of them who come here have not been subject to the severe competition and regulation that our own graduates must undergo.

It is noted now that the residencies are decreasing in number with the rise in cost, hospitals simply cannot afford this luxury. There is the rising militancy of the intern and resident staff which makes it more difficult for hospitals to use them as slave labor.

U.S. Medical School graduates are increasing from 10,000 in 1973 to 13,500 estimated in 1976.

With a decrease in U.S. residencies in number, some FMG's cannot get a year's residency in the U.S. to meet the requirements for licensure, so summing up, Dr. Ruhe said that there is a decline in the number of FMG's. They must all now take the same examination to qualify for their basic medical knowledge and for English language. There is a strong movement for legislation to remove the preference for FMG physicians in the immigration laws and there is a strong movement to change the exchange student laws so that they cannot come in as an exchange student and then sneak under the wire and remain to practice.

Then followed Dr. Edward R. Annis, former president of the AMA, who is always articulate and well informed. He related his remarks especially to the experience in Florida with the amalgamation of the Cuban physician refugees.

He mentioned that one in five practicing physicians in Florida are FMG's and one in three residents are FMG's.

He noted that the foreign exchange system in the last twelve or fourteen years brought in about 7,000 physicians. He also emphasized the so-called manpower shortage is declining in public favor and that FMG's are at a great disadvantage with the public when they almost fail totally to understand and speak the English language.

Dr. Ray L. Casterline, Executive Director of the Educational Council for Foreign Medical

Graduates, which conducts the famous ECFMG examinations, followed and discussed some of their problems. This commission began operation in the 1950's and is not only concerned with the examination itself but a great many other interests relating to the FMG.

The examination is a multiple choice with 360 items chosen from the National Board of Medical Examiners questions. Eight to ten percent of the questions are basic science, or formerly were and now it is up to 16%, and the balance is general medicine and surgery. He noted that psychiatry is not covered but that a great many of the FMG's are psychiatrists by training.

The English language test is not directed to a professional medical type question, they are given seventy minutes of English test, they listen to a tape or records and are given a choice of several responses to make from the material which has been read to them.

To return to the professional examination, these items have already been pretested by the National Board of Medical Examiners and on 5,000 medical students of the U.S. and Canada and as stated they are heavily weighted in general medicine and surgery.

For an FMG to become an exchange student he must have passed the ECFMG, and he must have a hospital contract position which may be sponsored up to five years.

The pass rate for this examination, ECFMG, is 35 to 40%.

Bolognia, Italy and Guadalajahra, Mexico are the source of most of the U.S. FMG's, that is U.S. citizens who go abroad to study medicine. Almost all European schools now refuse to admit U.S. nationals.

Dr. Neal A. Vanselow, Dean, College of Medicine, University of Arizona in our own glorious State of Arizona, directed his remarks to the "Fifth Pathway."

He first made the point that U.S. medical graduates are increasing in number from the 1963-64 of 8,500 entering the first year class to 1973-74 at which time 14,000 entered the first year medical class.

In 1963 17,000 applicants applied so that about 50% of them were accepted. In 1973 40,500 applicants applied to U.S. schools and only 35% of them made it.

Then he discussed the pathways or methods by which U.S. citizen FMG's may gain entrance back into the mainstream of U.S. medicine.

First of all, there are coordinated transfers of some of these foreign undergraduates into U.S. schools so that they enter the third and fourth year class and are graduates from a regular U.S. medical school. These students must pass Part I of the National Boards of whom only about 40% who take the examination pass and about eight hundred U.S. citizens have made it back into U.S. medical schools in that way, but of these who pass there are only a few places for them so, the mere fact that they pass Part I of the National Board does not assure them that they are going any place.

Then there is the ECFMG certificate which they must pass and then they must complete all of the curriculum required in the foreign medical school from which they originate, then as you know by taking another year or two residency in the United States they may be eligible for licensure.

But I missed out on what the third and fourth pathways are. I woke up when he reached the fifth and the fifth pathway is that they must have completed U.S. undergraduate study which would fit them for admission to a U.S. medical

school. Second they must study medicine outside the United States in a medical school listed under WHO. Third, they must complete all requirements of the foreign medical school except that of internship or social service.

They are then offered, in a U.S. medical school, a year of supervised graduate training and this then makes them eligible to enter their first year internship in this country. Remember, these FMG's are U.S. citizens.

So that in this way they might become fully licensed eventually but they may never acquire an M.D. degree. Because by leaving the country in which their foreign medical school was situated they do not take the year's internship or social service which may be required in that foreign country, their M.D. is withheld, they come to this country to their year of post graduate training in one of our medical schools, but they do not get an M.D.; they get a certificate of equivalency and then they are finally licensed by a state board which in itself does not award them an M.D. Nonetheless, they may be fully qualified.

The AMA has pushed for this program and roughly half of the states now permit the fifth pathway and in 1974-75 225 FMG's were in the program. There are now twelve medical schools which use the fifth pathway, the program varies and so there are no estimates on the success of it as yet.

If the fifth pathway is forced to take unqualified people it will fail. And one of the other discussants thinks it is this entrance of unqualified entrants which has led to failure in certain areas and he predicts that in the next five years this disparity between medical school openings and well qualified applicants will tend to disappear.

It was mentioned in passing, that there has been no means of examining the foreign medical schools by an accreditation committee. Obviously they are not going to open up for the U.S. to come in and do this and WHO hasn't seen fit to do it. You might be interested to know that it costs each student four thousand dollars a year tuition at Guadalajahra and there are now 2,000 U.S. students there, so that is a good chunk of money. By most standards however, this school wouldn't in any way measure up to the type of training which is given in U.S. medical schools.

Then finally, Dr. Casterline in commenting on the fifth pathway stated that we must remember that those who have completed all the requirements of the foreign medical school, their internship, and their social service, are not eligible for the fifth pathway, so that they must return in the regular way.

Well, after all of this is said and done it may be that you have some better notion about foreign medical graduates, the diversity of their origin, that some of them are U.S. citizens, that the standards of medical education in the 800 world-wide medical schools are extremely varied. That two of the most populated foreign medical schools, the one in Italy and the one in Mexico, have never been inspected by any official body to arrive at their quality of education. It is thought that letting FMG's in under the guise of a shortage of physicians in this country may soon disappear. Along with the privilege of coming in as an exchange student and then changing course in the middle of the stream and deciding to stay and becoming licensed in the land of milk and honey. This may not be so easy in the future. Nonetheless, we have many great practitioners from foreign medical schools, and unless you are of pure American Indian stock, we all were immigrants at one time or another.

Dean's Page

THE ELECTIVE PHASE OF THE CURRICULUM



NEAL A. VANSELOW, M.D.

The curriculum of the College of Medicine is divided into three portions—a first phase which emphasizes basic science instruction, a clinical-science second phase, and a final third phase designed to develop concepts and approaches which wed the basic and clinical experiences of the earlier two phases. The third portion, Phase III, has been called the Elective Phase.

While varying between 30 and 36 weeks in length during the years since the three-year curriculum was initiated in 1972, the educational objectives of Phase III have not changed. These are: 1) To provide students an opportunity to pursue in breadth and/or depth those areas appropriate for individual career goals; and 2) To furnish a mechanism for non-clinical (basic science) reinforcement of the concepts learned during the clinical experiences. The Curriculum Committee, through a subcommittee of representatives from each of the 15 College of Medicine departments, reviews each of the electives offered, encourages and develops new offerings in areas of need, and provides monitoring of each offering to assure quality of performance within the guidelines of Phase III. Although elective in structure, a strong career advisor system and a published catalog listing of the course offerings assure that the objectives of the phase are met. Each program is planned with a clinical advisor from the discipline most appropriate to the student's interests. Both student career interests and requisite balance are taken into consideration.

Clinical offerings during the phase include full and part-time experiences. Some are preceptorships of up to six weeks in length and represent specialty extensions of the more general clinical clerkships required or selected in Phase II. In the ambulatory care environment especially, part-time offerings are encouraged so that students may simultaneously select complementary clinical and non-clinical course offerings. This permits such combinations of experiences as a rheumatology clerkship with clinical experience in rehabilitative medicine or a non-clinical seminar in immunology. Some offerings are difficult to classify as clinical or non-clinical.

Such a course is Pulmonary Physiology offered by the Division of Respiratory Science. This is considered a basic science or non-clinical experience, yet the orientation of the pulmonary function laboratory is toward bedside medicine.

The non-clinical offerings of Phase III, similar to the clinical components, have several different formats. For some students full time laboratory or research basic science experiences are appropriate. Others select tutorial or part-time laboratory courses. For tutorial sessions, small group meetings are held by an interested faculty member in the basic or behavioral sciences during a clinical elective. Underlying mechanisms of clinical disease are discussed, utilizing the student's current clinical patient problems.

Seminars are more topically-oriented than the tutorials. Areas such as human sexuality, psychiatric interviewing, endocrine physiology, or lipid metabolism in atherosclerosis, form the content materials for the seminars. Conjoint seminars planned by interdepartmental groups sharing a common interest also are offered. Immunology, advanced neural sciences and infectious diseases are topics which lend themselves to conjoint planning. Material in areas such as ethics, medical juriprudence, statistics and literature evaluation also fit into this format.

Laboratory experiences in disciplines such as anatomy and pathology using regional areas of dissection and/or pathologic study are valuable accompaniments to an appropriate part-time clinical experience. Topics in clinical pathology have been popular as full time non-clinical courses.

While the format of Phase III allows flexibility in teaching methodology, topic, teaching arena, and time, certain constraints do exist. Except when specifically permitted by the Curriculum Committee to satisfy unique student needs, a combination of basic and clinical experience must be selected during the period. A minimum of 10 and a maximum of 18 weeks of non-clinical courses is allowed. This insures distributional breadth, allows combined non-clinical - clinical science depth and creates healthy competition for student elective time.

All full time clinical experiences must provide enough flexibility to allow students to schedule simultaneous related basic science experience. Some of the tutorials are designed on an ad hoc basis but most are included in the structure of the clinical elective. Full time clinical and non-clinical experiences at sites in rural or non-Tucson urban Arizona situations are encouraged up to a maximum of 18 weeks unless the student's program is extended beyond three years. As long as the basic requirements of the curriculum are met, extensions are invited. Students may add additional experiences to either Phase II or Phase III to accomplish special career goals such as earning a graduate degree or participating in six to twelve month preceptorial experiences in this country or abroad.

The success of this curricular approach is demonstrated by examining student participation in the various electives. Approximately one third of the students choose a set of Phase III experiences in line with specific career goals, while one third use the time to provide indepth review and extension of study in disciplines encountered earlier in Phases I and II. The remaining one third of the students use the experience as a potpourri of new educational encounters to broaden their education, complete time requirements or to provide an arena for maturing clinical experience. Phase III of the curriculum is thus meeting the full expectations of the faculty and student body.

Neal A. Vanselow

Obstetrics and Gynecology

MALE CONTRACEPTION — AN OVERVIEW

N. BURTON ATTICO, M.D., M.P.H.

The last fifteen years has seen a revolution in family planning, with the arrival of more effective, and non-coitally related contraception in the female, more acceptability of contraception, and more research into the pharmacology and physiology of conception and contraception.

Presently, about 20% of American couples use male methods of contraception, including the condom, coitus interruptus, and vasectomy (Arizona has one of the highest per capita vasectomy rates in the USA).

The male conceptive process has only three areas that are amenable to controlled interference: sperm production (spermatogenesis), sperm maturation in the male (epididymis) or female (capacitation), and sperm transport and motility. Methods have been either mechanical (occlusive, divertive) or chemical (includes hormonal and sclerosive). The immunological approach,

From: Dept. of Obstetrics & Gynecology, Phoenix Indian Medical Center, Phoenix. (Reprint requests to Dr. Attico, Assist. Chief and Maternal Child Health Coordinator.)

while a distinct possibility, has not been a primary approach.

Estimates are that 11-16% of couples use condoms, and besides building a better condom, newer marketing methods have arisen. Condoms have newer and varied shapes and materials (skins, latexes, plastics), varied lubricants and packaging, as well as more extensive advertising (both slick and pulp men's and women's magazines as well as TV), and the introduction of marketing by mail.

Vasectomy and vaso-vasostomy techniques have been explored and modified. "Medical" vasectomy via percutaneous vas injection of sclerosing materials (formaldehyde, ethanol, acetic acid, sodium morrhuate, silver nitrate, potassium permanganate) has been successful in animals and is undergoing human trial. Still imperfect are devices to provide reversible sterilization (gold, silver, stainless steel, dacron and silastic valves, and intravasal threads). Microsurgery in vaso-vasostomy has been introduced, with success rates of up to 80%. Studies of sperm antibodies (50% of vasectomies) and other side effects of vasectomy have thus far yielded nebulous and conflicting information.

Chemical control of male fertility via hormones or other chemicals is promising, but far from practical. Besides the long latent period of 6-12 weeks (in both induction and reversal) most hormones (usually progestins in high dosages) usually require simultaneous testosterone administration to counteract impotence, gynecomastia or loss of libido. Non-hormonal chemicals (copper and alpha-chlorhydrin) have either had undesirable side effects in short term use, or irreversibility with higher dosages or prolonged usage.

Immunologic contraception is a promising field, with the interest beginning with the discovery of post-vasectomy sperm antibodies. Animal studies show both males and females can be immunized against sperm, although the permanence (or non-permanence) is not predictable.

Our present level of technology dictates improvement of old methods coincident with research into the methods, with a diligent search for short and long term side effects in both.

Disclaimer:
Opinions expressed are those of the author, and do not necessarily reflect the views of the U.S. Public Health Service.

Bibliography:
Extensive current bibliography is available on request.

Clinical Oncology In Arizona

NITROSOUREAS: IMPORTANT NEW DRUGS FOR THE TREATMENT OF CANCER

SYDNEY E. SALMON, M.D.

Editors: Sydney E. Salmon, M.D., Professor and Head, Section of Hematology and Oncology, University of Arizona College of Medicine, Tucson, Arizona 85724; Robert H. Thoeny, M.D., Dir., Radiation Oncology, Good Samaritan Hospital, Phoenix, Arizona 85006; Darwin W. Neubauer, M.D., General Surgeon, 720 Country Club Road, Tucson, 85716.

The Division of Cancer Treatment of the National Cancer Institute (NCI) held a New Drug Seminar December 15-16, 1975, in Washington, D.C., on the subject of nitrosoureas. Two of these compounds, BCNU (Carmustine) and CCNU (Lomustine) will become commercially available within the next few months, and the purpose of the conference was to discuss their role in the therapy of cancer. A third promising nitrosourea, methyl-CCNC (Sesmustine), was also discussed, but this drug will not be ready for release by the Food and Drug Administration (FDA) for some time yet. Although the proceedings of this conference will be published about 9 months from now, it is appropriate to briefly review the major features, inasmuch as BCNU and CCNU will become commercially available in Arizona in the meantime. Many of Arizona's medical oncologists have already been using these drugs during their investigational phase through a cooperative program with the Section of Hematology and Oncology of the University of Arizona. In my opinion, because of the potency and toxicity of these drugs, they should still be administered by medical oncologists, as part of a multidisciplinary team with surgeons and radiation oncologists. It is of interest that it has taken 13 years from the first evidence of

From: Arizona Medical Center, 1501 N. Campbell Ave., Tucson, AZ 85724 (Dr. Salmon).

potent anticancer activity in the NCI mouse tumor screen in 1963 for sufficient drug development and clinical information on these drugs to accumulate to satisfy FDA requirements.

PHARMACOLOGY

The nitrosoureas are simple synthetic compounds with high lipid solubility and alkylating radicals which cross-link DNA. The high lipid solubility permits them to cross the blood-brain barrier. Of importance, tumors which become resistant to more conventional alkylating agents (e.g., nitrogen mustard [mechlorethamine], melphalan, cyclophosphamide) often remain sensitive to nitrosoureas. The primary toxicity of the nitrosoureas is bone marrow suppression, which is of characteristic delayed onset, so that maximum myelosuppression is not observed for 4-6 weeks after a dose. Patients may have transient nausea and/or vomiting several hours after the dose is given. For BCNU, which is given intravenously, the maximally tolerated dose as a single agent is 225 mgm/M^2 once every 6 weeks. Inasmuch as ethanol serves as a solvent for intravenous BCNU, too rapid administration of large doses can result in transient ethanol intoxication. CCNU and methyl-CCNU are oral drugs which each have maximum tolerated doses of 150 mgm/M^2 every 6 weeks. Cumulative bone marrow toxicity may occur with all three of these drugs, and after 3-4 courses the dose may have to be reduced and the intervals between treatment increased. The nitrosoureas usually must be given in reduced doses when given with other marrow-toxic drugs. Their current major clinical uses are in brain tumors, gastrointestinal tract adenocarcinomas, lung cancer, lymphomas, and multiple myeloma.

CLINICAL USES OF NITROSOUREAS

Brain Tumors

The treatment of grade III and IV gliomas, particularly glioblastoma multiforme, is unsatisfactory. Computed tomography has improved the neurosurgeon's ability to limit surgery more effectively to the areas of known tumor; however, the lesions are almost invariably incurable with surgery alone, and the median survival is in the range of 30 weeks. The National Brain Tumor Study Group has shown that whole-brain radiotherapy (about 5500 rads) in addition to surgery only increases median survival to 36 weeks. The addition of full doses of BCNU every 6-8 weeks to surgery and radiotherapy increases median survival to 50 weeks, and about 20% of patients are still alive at 18 months, whereas with surgery and radiotherapy, survivors beyond a year are distinctly uncommon. BCNU appears to be superior to either CCNU or methyl-CCNU in brain tumor chemotherapy.

On the basis of this data, use of BCNU as part of combined modality therapy for high grade gliomas is clearly warranted. Uses of combination chemotherapy (e.g., with the podophyllotoxin derivative VM-26) remain investigational.

Hodgkin's Disease

Nitrosoureas are currently indicated to induce remission predominantly in advanced Hodgkin's disease patients who relapse while receiving combination chemotherapy with "MOPP" (mechlorethamine, vincristine [Oncovin], procarbazine, and prednisone). CCNU appears to be the most active nitrosourea in Hodgkin's disease, and it can be given at reduced dosage in combination with other drugs with independent mechanisms of action (e.g., adriamycin, bleomycin, vinblastine). While CCNU can be used as a substitute for mechlorethamine in initial therapy with combinations similar to MOPP (with perhaps some reduction in toxicity),[2] such combinations are not yet clearly superior to MOPP with regard to overall survival. In contrast, the nitrosoureas appear to have more limited use in the treatment of non-Hodgkin's lymphomas.

Multiple Myeloma

BCNU and CCNU both appear to have equivalent activity to melphalan or cyclophosphamide for initial remission induction and overall survival in multiple myeloma.[3] However, they do produce more profound marrow toxicity in myeloma patients (who often have compromised marrow to begin with), and I therefore prefer more conventional alkylating agents combined with prednisone for remission induction therapy. When used as single agents, nitrosoureas produce only rare remissions in myeloma patients who fail to respond to melphalan or cyclophosphamide or who relapse from these drugs after prolonged remissions. At the University of Arizona, we have treated 13 patients with the combination of BCNU and adriamycin[4] for advanced relapsing myeloma. In this program, BCNU and adriamycin are each given at a dose of 30 mgm/M^2 IV every 3-4 weeks. Seven of these patients re-entered remission, with two of the patients having greater than 75% tumor mass

reduction and three patients having remissions lasting for a year or more on this form of therapy. This is an extremely encouraging result and provides a useful new approach to the treatment of myeloma patients in relapse.

Gastrointestinal Tumors

The investigational drug methyl-CCNU appears to be the most active nitrosourea for the treatment of patients with adenocarcinoma of the stomach, pancreas, colon, or rectum. Approximately 20% of patients with metastatic tumors arising from these sites achieve partial tumor response (>50% tumor regression) when treated with methyl-CCNU. Results are more impressive when methyl-CCNU is combined with 5-fluorouracil (5-FU), and 35%-40% of patients achieve partial response with combination chemotherapy.[5] However, complete tumor responses are still not observed, and, as a result, overall survival (at least in colon cancer) is only minimally increased.

Results are better in gastric carcinoma and about 18% of patients who receive methyl-CCNU plus 5-FU are still alive at 18 months, whereas the median survival with surgery alone is in the range of 7 months. While BCNU might be effective when combined with 5-FU, it has yet to be given anywhere near as adequate a trial as methyl-CCNU. The combination of methyl-CCNU plus 5-FU as an adjuvant to primary colorectal surgery is currently under study by the Gastrointestinal Study Group, but it cannot yet be recommended for general use, particularly because it induces considerable hematopoietic toxicity and has yet to be proven efficacious.

Other Tumors

Occasional responses in other tumor categories are seen when nitrosoureas are used alone or in combination chemotherapy. These include cervical, ovarian, and lung carcinomas.

While the ultimate role of the nitrosoureas in cancer therapy remains to be determined, as can be seen from these comments these drugs already play an important role in settings in which other anticancer drugs have proven ineffective.

REFERENCES

1. Walker, M.: Nitrosoureas in the treatment of brain tumors. 7th New Drug Seminar, Washington, D.C., December 1975.
2. Spurr, C. E., et al: The superiority of a nitrosourea (CCNU) containing four-drug combination over MOPP in the treatment of stage III and IV Hodgkin's disease. Blood, 46:1014, 1975.
3. Salmon, S. E.: Nitrosoureas in multiple myeloma. 7th New Drug Seminar, Washington, D.C., December 1975.
4. Alberts, D. S., and Salmon, S. E.: Adriamycin-BCNU (A-B): Effective therapy for myeloma (MM) relapsing on alkylating agents. Proceedings of the American Association for Cancer Research, May 1976, in press.
5. Moertel, C. A.: Nitrosoureas in gastrointestinal carcinoma. 7th New Drug Seminar, Washington, D.C., December 1975.

Seminars in Endocrinology and Metabolism

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

Reprint requests to: 3411 North Fifth Avenue, Phoenix, Arizona 85013.

ANOTHER CLINICAL DILEMMA: DIABETIC NEUROPATHY

MARSHALL B. BLOCK, M.D.

Classically it has been proposed that the neuropathic changes of diabetes mellitus are the consequences of the abnormalities in carbohydrate and lipid metabolism that are the hallmarks of the disease. On the other hand, there has been interest in the possibility that the peripheral neuropathy, nephropathy and retinopathy seen in patients with diabetes may be inherited as a separate trait(s). In light of such uncertainty it is difficult to develop a rational classification and therapeutic basis for these conditions. This accounts for much of the confusion and frustration experienced by physicians and patients alike in

the management of these disorders. At the present time, an anatomical classification is the best that is available and in light of the prevalence of these disorders and their disabling nature, a brief review seems warranted.

The lower extremeties are probably most commonly affected in diabetic patients. The neuropathy there is usually bilateral, symmetric, and mostly sensory in its involvement. The two most characteristic complaints are pain and paresthesias. The pain is usually dull and aching but can be crampy. However, it seems to improve with exercise in contrast to that seen in patients with occlusive vascular disease. In the latter condition, a build up of metabolites due to a decrease in blood flow to the muscles in the legs gives rise to characteristic cramps that one sees. On physical examination loss of sensation, particularly vibratory perception is variable. Since this may decrease with age normally, it is sometimes difficult to distinguish the diabetic variety from that which occurs to normal aging. Loss of ankle jerks, however, are a much more important finding and they, when absent, are a very telling sign. Involvement of the motor system resulting in unilateral or bilateral foot drop has been described in patients with diabetes mellitus. Diabetic amyotrophy is another condition which usually occurs in men who have only mild diabetes mellitus. It is usually a progressive weakness and/or wasting of muscles accompanied by pain with little sensory involvement. Changes in cerebral spinal fluid protein concentrations can also be found in this condition. The muscles involved are those of the pelvic girdle predominantly.

Although the above descriptions have been described in the lower extremeties, similar types of neuropathies, both sensory and motor, can be found in the upper extremeties also. The difficulty in diagnosing diabetic neuropathy occurs when patients are admitted to the hospital for various cervical cord lesions or brachial plexus lesions and an abnormal glucose tolerance test is obtained. Unless the changes are severe during the glucose tolerance test it is oftentimes difficult to diagnose diabetes under these circumstances. This is due to the fact that the patients are usually immobilized and have not been prepared dietarily before the test is conducted. Under such circumstances, it is probably best to avoid labeling the neuropathy "diabetic" until ideal circumstances exist for the performance of the test, especially when borderline blood sugar results are found and fasting blood sugar levels are normal.

As regards treatment of these pheripheral neuropathies, unfortunately, very little is available. Those conditions associated with pain can be treated symptomatically. Since it is not known whether strict diabetic control enhances or prolongs the severity of the peripheral neuropathy, it is probably best at this time to try to bring the patient to reasonable diabetic control with diet and/or the use of insulin. Once this is accomplished, time is probably the best healer and progressive improvement usually occurs. There have been several agents used for the treatment of these conditions with limited success. Recently, Dilantin, an agent used for its diffuse central nervous system effects, has been tried with limited acclaim. The usual dose, 100 mg. two to three times a day, has proved beneficial in selective patients. A trial of at least one week should be given before it is discarded. Likewise, Clofibrate has been utilized to some extent for this condition, also with limited success. There has been a trial of Atromid-S for this condition and it, too, has in a similar number of patients, been of limited usefulness. Control of cholesterol and triglyceride levels in addition may prove beneficial in the long run, although it is difficult to be certain that they will have any immediate effect in alleviating the peripheral neuropathy.

Other forms of neuropathy which have been described in diabetic patients include several

other organ systems. Extraocular muscle palsies involving the 3rd, 4th and 6th cranial nerves are not uncommon. Unilateral nerve palsies associated with headaches have to be distinguished from possible intracranial aneurysms. However, the diabetic variety of isolated neuropathies tend to spontaneously clear in six to twelve weeks. Pupillary changes have also been noted and these can vary from a true Argyll Robertson pupil to an Adic's pupil. The safest course of action is to rule out any intracranial cause for such lesions before one ascribes it to diabetes mellitus.

Involvement of the autonomic nervous system usually gives rise to several characteristic syndromes in diabetic patients. These include orthostatic hypotension which is due to failure of the normal reflex arteriolar and venular constriction during assumption of upright posture. This leads to pooling of blood in the lower extremeties and this in turn leads to diminished cardiac output which results in the sensation of dizziness. The use of ephedrine, corticoids with large mineralocorticoid effects, and elastic support hose are some of those measures that have been utilized with limited success. Other varieties of autonomic dysfunction include anhidrosis (the absence of sweating). However, some patients do develop abnormal patterns of sweating so that although anhidrosis is present during the day, in the evening diffuse sweating can take place. Treatment is largely symptomatic at best and hopefully it resolves spontaneously although this is not always necessarily the case. Treatment with anticholinergic agents such as Elavil sometimes inhibits the nocturnal sweating.

Although there are multiple gastrointestinal tract problems that diabetics have, probably the most common is that of diarrhea. There probably are multiple etiologies for the diarrhea but obviously changes associated with blood supply to the motor neurons controlling small bowel function as well as the secondary changes which take place in the small bowel itself to decreased vascular flow contribute. Bacterial overgrowth is an additional feature which may complicate the above noted changes in small bowel morphology. The clinical presentation of diabetic enteropathy is characterized by intermittent recurrent attacks of nocturnal and postprandial diarrhea, a tendency to nocturnal fecal incontinence, roentgenographic features of disorders of small bowel motility and normal exocrine pancreatic function and the presence of autonomic neuropathy. Treatment of this condition is difficult because of the spontaneous fluctuations in its severity. A recent study has indicated that broad spectrum antibiotics may prove beneficial in some of the recalcitrant varieties of this disorder, however obviously with the multiple etiologies, only some patients will respond to this type of therapy. The use of various vitamin preparations, although encouraging for the patient, really has not been shown to be of much value in correcting the underlying problems. The use of steroids has produced some improvement in the condition but one must obviously weigh the benefits with risks attendant upon such treatment. Worsening of diabetic control is obviously one which needs to be closely watched when such compounds are employed.

In summary then, we do not know the cause of the peripheral neuropathies which we see clinically in diabetic patients. Yet we are forced to treat these conditions because of their disabling nature. In this light it is not surprising that our therapy is somewhat impotent. Only additional research can help put therapy on a rational basis. In this light several recent advances in possible causes for such changes such as increased activity of the sorbitol pathway, may in the future shed some light on these problems. For the present, however, the art of medicine is outpacing its scientific counterpart, in this area.

REFERENCES

1. Campbell. I. W., et al: 9-Alpha-fluro-hydrocortisone in the treatment of postural hypotension in diabetic autonomic neuropathy. Diabetes, 24:381, 1975.

2. Berenyi, M. R., et al: Treatment of diabetic neuropathy with Clofibrate. J. Am. Geriatrics Soc., 19:763, 1971.

3. Shahani, B., et al: Diabetes mellitus presenting with bilateral foot-drop. Lancet, II:930, 1969.

Radiology
Case of the Month



Figure 1

CASE NUMBER 7

JOHN C. BJELLAND, M.D.
IRWIN M. FREUNDLICH, M.D.

A 65 year old man was admitted with fever, chills and increasing abdominal pain. During the past 10 days he had been on a drinking binge and had noted episodic mid-epigastric pain during that time.

The patient was a known chronic alcoholic, who carried a diagnosis of Laennec's cirrhosis and peptic ulcer disease. Physical examination revealed rigid guarding of the abdomen. A CBC drawn on admission showed leukocytosis with the presence of a shift to the left. A diagnostic abdominal paracentesis was performed, which revealed purulent fluid. The abdominal radiograph above was made soon after admission to the emergency room.

What is the radiographic diagnosis?

From: Arizona Medical Center, Dept. of Radiology, Tucson, AZ 85724

PNEUMOPERITONEUM



Figure 2



left lateral decubitus
Figure 3

Figure 2 above is the same radiograph as seen on the previous page with arrows outlining the wall of the colon. The outer margin of the wall can only be seen because of free intraperitoneal air. This is the key to the diagnosis that is called radiographieally the double-wall sign. The intraluminal gas and the extraluminal, intraperitoneal free air create the contrast with the soft tissue or water density of the bowel wall. Because the viscus wall is so sharply outlined, almost as if it had been etehed onto the radiograph, its appearance has been likened to that of bas relief in jewelry construetion. Although the term is not a partieularly good one, this has also been called the radiographic bas relief sign. If the bowel lumen is filled with fluid and free intraperitoneal air is present, then only the outside wall of the viscus will be visualized but this still serves as a sign of free abdominal air. Likewise, the faleiform ligament, which is the remnant of the fetal umbilical vein, will demonstrate the same sign, if surrounded by free intraperitoneal air.

The lateral decutitus view of this patient's abdomen confirms the large pneumoperitoneum. At surgery a large perforated ulcer was demonstrated on the lesser curvature of the stomach.

REFERENCES

1. Ausari, A.: Spontaneous Acute Peritonitis with Bacteremia in Patients with Decompensated Laennec's Cirrhosis. Am. J. Gastroent. 55: 265-272. March 1971.

2. Miller, R. E. and Nelson, S. W.: The Roentgenologic Demonstration of Tiny Amounts of Free Intraperitoneal bas: Experimental and Clinical Studies. Am. J. Roengenol. 112: 574-583, 1971.

ERRATUM:
In Radiology Case #6, found on page 41 of the January issue, the figures were reversed. They are reproduced correctly here along with the problem. The answer appears on page 42 of the January issue. Tim B. Hunter, M.D. and Alan C. Winfield, M.D. authors.



Figure 1



Figure 2

An 18 year old male employee of a swimming pool cleaning service was working along a pool deck when he apparently slipped and fell into the pool. He is a non-swimmer and was underwater a short time prior to being rescued by a bystander. By the time he was picked up by the ambulance service he was breathing spontaneously but had no personal recall of any of the events which transpired from the time he fell into the pool until he reached the Yuma Regional Medical Center Emergency Room. At the time of admission he was alert and responsive but did have a moderate degree of dyspnea and slight hemoptysis. Physical exam revealed some dried blood in his mouth, fine rales over the left lung field and course breath sounds on the right. His pulse was 120, blood pressure normal and respiratory rate 30. Laboratory studies were mostly unremarkable except for a slight WBC elevation (12,800). His RBC count, hemoglobin and hematocrit were normal.

Figure 1 is the patient's admission chest radiograph. What abnormality, if any, is present? Figure 2 is a chest radiograph obtained 4 hours after admission. What abnormality is present?

FROM: Arizona Medical Center, Dept. of Radiology, Tucson, AZ 85724. (Dr. I.M. Fruendlich, and Dr. John C. Bjelland, Editors)

Seminars in Chest Medicine

SURGERY AND THE PATIENT WITH LUNG DISEASE

I. PREOPERATIVE APPRAISAL AND PREPARATION

WILLIAM C. WEESE, M.D.

This continuing series of articles entitled "Seminars in Chest Medicine" will attempt to keep the reader abreast of developments in the broad field of pulmonary diseases. The format used will be that of brief succinct reviews written by the editors as well as guest contributors. Areas of controversy as well as practical chest medicine will be explored. We hope that these reviews will be of value in promoting continuing education for certification examinations as well as a forum for new and controversial issues. The editors welcome comments and discussion from our readers.

ROBERT J. CLARK, M.D.
LYNN M. TAUSSIG, M.D.
WILLIAM C. WEESE, M.D.

From: 2910 North Third St., Phoenix, AZ 85012

Pulmonary complications are the leading cause of surgical morbidity and mortality. Retained secretions, hypoxemia, atelectasis, pneumonia, or frank respiratory failure occur in 20-40% of patients following major thoracic or abdominal procedures. Patients with underlying lung disease (especially asthma, chronic bronchitis, and emphysema) have more postoperative complications irrespective of the site of incision. The purpose of this paper is to emphasize the need for identification of high risk patients and to outline a preoperative approach to minimize surgical morbidity.

Pulmonary function studies (PFTS) are the key to patient evaluation. Although history of tobacco smoking, cough, sputum production, or dyspnea suggests lung disease, PFTS identify asymptomatic persons and quantitate the degree of physiologic impairment. These tests, simply performed and available in most hospitals, begin with lung volumes. Vital capacity (VC) is the maximal volume of air that can be exhaled after a full inspiration. Residual volume (RV) is the

quantity of air remaining in the lungs after a maximal expiration. Total lung capacity (TLC) is the sum of residual volume and vital capacity.

Flow rates measure the speed of inspiration and expiration. FEV_1 (forced expiratory volume in one second) is that portion of the vital capacity delivered by a maximally forced exhalation in one second. Peak flow rate (PFR, also called maximal expiratory flow rate) is the maximal tangent to the volume-time curve on a spirograph. Maximal breathing capacity (MBC, also called maximal voluntary ventilation, MVV) is the maximum volume of air an individual can move during a 15-second period of rapid inhalation and exhalation; it is expressed in liters/minute. MBC is a very helpful measurement for a normal value implies normal flow rates, lung volumes, and neuromuscular function; the test, however, is taxing to perform and will be abnormal if patient effort is poor. Normograms for PFTS are based on age, height, and sex, and values $\geqq 80\%$ predicted (average $\pm$ 2 standard deviations are considered "normal." Defects are termed "severe" if observed values are less than 50% predicted. A diminution in total lung capacity is classified a restrictive defect, while a decrease in flow rates (MBC, FEV_1, and PFR) is called an obstructive defect. Flow rates are usually repeated after inhalation of a bronchodilator to assess reversibility.

The lungs serve to oxygenate and remove carbon dioxide from blood leaving the right side of the heart; arterial blood gases assess this function. $PaCO_2$ is a measure of alveolar ventilation which is that portion of minute ventilation actually participating in gas exchange. PaO_2, on the other hand, reflects ventilation of functioning capillaries; it is low (hypoxemia) in instances of right-to-left shunting, ventilation/perfusion inequality, and alveolar hypoventilation (elevated $PaCO_2$). Arterial blood gases should be obtained whenever PFTS show obstructive or restrictive defects or the patient complains of dyspnea. When pulmonary resection is contemplated, split lung function studies (bronchospirometry or ventilation/perfusion scanning) can help predict physiologic loss from surgery.

Stein showed the value of appropriate preoperative respiratory therapy.[1] (See Table) In 29 patients with normal spirometry and alveolar carbon dioxide tension, only 3 had postoperative pulmonary complications. Half the patients with abnormal PFTS were given individualized pulmonary treatment (including cessation of smoking, chest physical therapy, postural drainage, bronchodilators, antibiotics, and ultrasonic nebulization, in some instances delaying surgery). In this group, only 5 of 23 had postoperative pulmonary complications. By contrast, in those 25 patients with abnormal PFTS in whom intensive respiratory therapy was not administered, there were four deaths and thirteen additional patients suffering pulmonary complications.

Table 1
Post-Operative Pulmonary Complications
Related to Pre-Operative Pulmonary Function*

	Number of Patients	Pulmonary Complications	Deaths
Patients with Normal Pulmonary Function Tests			
Thoracic Incision	16	1	0
Other Incision	13	2	0
Patients with Abnormal Pulmonary Function Tests			
With Pre-Operative Pulmonary Therapy			
Thoracic Incision	17	4	0
Other Incision	6	1	0
Without Pre-Operative Pulmonary Therapy			
Thoracic Incision	17	9	4
Other Incision	8	2	0

*Data taken from Stein and Cassara[1]

Even in the non-pulmonary patient, lung function is compromised for 1-5 days postoperatively. Most severely affected are those undergoing thoracic or high abdominal incisions, for splinting of the wound and diaphragm limits cough and deep inspiration. Hypoexmia due to airway closure and subsequent atelectasis (usually too microscopic to appear on chest roentgenogram) is an almost universal finding, as the vital capacity and functional residual capacity decrease by 20-40%. Narcotics depress alveolar ventilation, cough, and sighs, while immobility in bed promotes inspissation of secretions and vascular congestion in dependent portions of the lung. Preoperative fasting, dehydration, administration of atropine-like drugs, diuretics, and non-humidified anesthetic gases allow secretions to become viscous. Endotracheal intubation may also cause transient tracheal edema and interfere with ciliary action.

Published guidelines for operative risk are

vague and deal almost exclusively with patients undergoing pulmonary resection. Risk is very low for a wedge resection in young patients with a benign coin lesion. It is high for pneumonectomy in elderly patients with severe obstructive airways disease and bronchogenic carcinoma. The point between these extremes at which operative risk rises is not well defined. Published series variably suggest morbidity and mortality to be greatest if: VC $<$ 2 liters and MBC $<$ 45 liters/minute;[2] age exceeds 40 years, MBC $<$ 50% predicted, and EKG is abnormal;[3] FEV_1 $<$ 2.0 liters/second;[4] observed values are $<$ 60% predicted in any two of MBC, VC, PFR, and FEV_1;[5] MBC $<$ 50% predicted;[6] MBC $<$ 59% predcited, age $>$ 69 years, and EKG is abnormal;[7] and intraoperative pulmonary artery pressure exceeds 35 mm Hg.[8] Some authors, however, could find no correlation between preoperative pulmonary function studies and postoperative course.[9-11] All published data are statiscal; unfortunately, no single test or combination of tests will predict accurately the course for an individual patient.

PFTS complement the history and chest examination and may obviate the need for preoperative pulmonary therapy. Such treatment must be individualized, with special attention paid to patients scheduled for thoracotomy or upper abdominal surgery. Main goals are:

(a) *Optimize tracheo-bronchial hygiene.* Since tobacco smoke produces an irritative bronchitis (with increased mucus to be expectorated postoperativcly) and paralyzes ciliary action (making expectoration more difficult), cigarettes must be discontinued for at least several days in advance of surgery. If secretions are purulent, a course of antibiotics (appropriately chosen from sputum culture sensitivities) will decrease incidence of subsequent bronchitis and pneumonitis. Chest physical therapy and postural drainage facilitate clearance of secretions before the cough reflex is suppressed. When sputum is thick, ultrasonic nebulization is helpful. Expectorants (SSKI and glyceryl guaiacolate) are popularly prescribed, though probably are no more effective than adequate hydration.

(b) *Decrease airways resistance.* Any of a number of bronchodilators can be used when an obstructive defect is demonstrated; they serve to diminish work of breathing. Available are xanthines, beta-adrenergic agents, and steroids. The latter are most efficacious when an asthmatic component is suspected and in patients with allergic eosinophilia.

(c) *Promote effective cough and deep breathing.* Patients with obstructive airways disease are instructed in use of accessory muscles of respiration (diaphragm and neck muscles). Pursed lip breathing will prevent airway collapse on forced exhalation.

(d) *Ancillary measures.* Subclinical pulmonary edema decreases lung volumes and flow rates and is readily amenable to treatment. Weight reduction in obese patients and a preoperative exercise program will improve exercise tolerance and facilitate postoperative ambulation.

Despite advances in surgical and anesthetic techniques, the frequency of postoperative pulmonary complications remains high. Since more than 40% of American adults smoke cigarettes, the incidence of pulmonary symptoms and of physiological abnormalities is also high. By identifying these patients and improving their lung function and hygiene preoperatively, postoperative morbidity and mortality can be reduced.

REFERENCES

1. Stein, M.; Cassara, E. L.: Preoperative pulmonary evaluation and therapy for surgery patients. PAMA 211: 787-790, 1970.
2. Gaensler, E. A.; Cugell, D. W.; Lindgren, I, et al.: The role of pulmonary insufficiency in mortality and invalidism following surgery for pulmonary tuberculosis. J. Thor. Surg. 29: 163-187. 1955.
3. Mittman, C.: Assessment of operative risk in thoracic surgery. Amer. Rev. Resp. Dis. 84: 197-207, 1961.
4. Boushy, S. F.; Billig, D. M.; North, L. B., et al.: Clinical course related to preoperative and postoperative pulmonary function in patients with bronchogenic carcinoma. Chest. 59: 383-391, 1971.
5. Bryant, L. R.; Rams, J. J.; Trinkle, J. K., et al.: Present-day risk of thoracotomy in patients with compromised pulmonary function. Arch. Surg. 101: 140-144, 1970.
6. Swenson, E. W.; Stallberg-Stenhagen, S.; Beck, M.: Arterial oxygen, carbon dioxide, and pH levels in patients undergoing pulmonary resection. Intraoperative and early postoperative observations. J. Thor. Cardiovasc. Surg. 42: 179-192 1961.
7. Didolkar, M. S.; Moore, R. H.; Takita, H.: Evaluation of the risk in pulmonary resection for bronchogenic carcinoma. Amer. J. Surg. 127: 700-703, 1974.
8. Pecora, D. V.: Evaluation of cardiopulmonary reserve in candidates for chest surgery. J. Thor. Cardiovasc. Surg. 44: 60-66, 1962.
9. Larsen, M. C.; Cliffton, E. E.: The prognostic value of preoperative evaluation of patients undergoing thoracic surgery. Dis. Chest. 47: 589-594, 1965.
10. Van Nostrand, D.; Kjelsberg, M. O.; Humphrey, E. W.: Preresectional evaluation of risk from pneumonectomy. Surg. Gynec. Obstet. 127: 306-312, 1968.
11. Karliner, J. S.; Coomaraswamy, R.; Williams, M. H., Jr.: Relationship between preoperative pulmonary function studies and prognosis of patients undergoing pneumonectomy for carcinoma of the lung. Dis. Chest. 54: 112-119, 1968.

Department of Health Services

VENEREAL DISEASE SCREENING PROGRAM



SUZANNE DANDOY, M.D.
ACTING DIRECTOR

Although gonorrhea has been with men and women throughout recorded history, the gram negative organism which causes the disease was identified a scant 70-odd years ago. It has only been 25 years that we have had penicillin to deal with gonorrhea, and only in the past five years have we had a reliable diagnostic procedure for detecting the disease in women (the Thayer-Martin culture medium).

Most men are painfully aware of their gonococcal infection within days of its acquisition, and laboratory procedures for confirming the disease in males are simple, quick and reasonably reliable.

But most women may not be aware that they are "victims" of the disease for weeks or even months after acquisition, for the symptoms are either absent or indistinguishable from "normal" vaginal problems. Further, laboratory procedures for confirming gonorrhea in women are time-consuming, complicated and sometimes inaccurate. Specimens from females must be obtained by pelvic examination from the cervix of the uterus. Exudate is then transferred to Thayer-Martin culture medium, placed in a carbon dioxide atmosphere and incubated at 35-36 degrees centigrade for 24 to 48 hours. Only then can the laboratory procedures begin.

Public health officials throughout the world have long believed that little progress toward controlling gonorrhea will be made until methods are devised for reducing the vast reservoir of asymptomatic infection among women. For this reason, despite the difficulties inherent in the laboratory diagnostic procedures described above, the Thayer-Martin culture medium has been adopted almost universally as the first-line offensive weapon against gonorrhea.

In 1972, using federal funds, Arizona embarked upon a mass culture screening program among females in the child-bearing groups. Acting cooperatively, physicians in private practice, public and private hospital OB-GYN and emergency room clinics, family planning centers, cancer detection clinics and many other places where large numbers of females routinely receive pelvic examinations for other purposes, began testing also for gonorrhea. Laboratory support has been provided without charge by the Department of Health Services and the Laboratories of the Maricopa and Pima county health departments.

The accompanying table testifies that this program has been extremely fruitful. In fiscal year 1975, 1,906 females who were unaware they had gonorrhea were identified and treated through this effort. This figure represents 17 percent of the total number of cases reported to the Department, and 41 percent of the total reported gonorrhea among females. The figure also represents 97 percent of the total increase in reported cases of gonorrhea in fiscal year 1975, as compared to fiscal year 1974.

Results of Gonorrhea Culture Tests on Females on Females — July 1974 - June 1975

Source of Test	Number Tested	Number Positive	Percent Positive
Health Care Providers (excluding VD Clinics)	118,832	1,906	1.6
Health Dept. Non-VD Clinic	33,273	721	2.2
Family Planning	12,778	192	1.5
Prenatal, OB-GYN	1,625	20	1.2
Combinations or Other	18,870	509	2.7
Public/Private Hospital —Outpatient	9,676	276	2.9
Family Planning	1,421	28	2.0
Prenatal, OB-GYN	4,662	82	1.8
Combinations or Other	3,593	166	4.6
Public/Private Hospital —Inpatient	197	5	2.5
Community Health Centers	2,857	82	2.9
Family Planning	243	5	2.1
Prenatal, OB-GYN	897	20	2.2
Combinatinos or Other	1,717	57	3.3
Private Physicians	46,216	404	0.9
Private Family Planning Groups	14,908	172	1.2
Group Health Clinics	1,433	83	5.8
Student Health Centers	3,237	73	2.3
Manpower Training Agencies	12	0	0.0
Industrial Screening	507	5	1.0
Military/Dependents	4,919	14	0.3
Correction or Detention Centers	379	13	3.4
Not specified	1,218	58	4.8
Venereal Disease Clinics	16,376	2,484	15.2
Gonorhea Contacts	4,176	1,604	38.4
Syphilis Contacts/Clusters/ Reactors	369	43	11.7
Other	11,831	837	7.1
TOTAL (all providers)	135,208	4,390	3.2

Budgetary considerations have caused our venereal disease control staff to take a very close look at this program to see if savings can be effected without impairing the yield. Analysis has disclosed that virtually 100 percent of the cases found through this screening process are in women under 30 years of age. Since one-third of the females tested were over 30, this discovery means that we will now be able to assure the same output at only two-thirds the original cost. We expect other analyses currently in progress will allow us to further direct the screening effort toward selected high-risk groups.

The success of Arizona's gonorrhea culture screening program can be attributed almost entirely to the harmonious cooperation between public and private medicine. The program was initiated in response to the urgings of many physicians in private practice who believed that some unusual efforts must be undertaken to discover the "hidden" cases of gonorrhea among their female patients. Continued success will depend upon perpetuating this cooperative relationship. If you would like to learn more about this program and what role you may assume in its continued success, please call 271-4465.

Editorial

BEAUTY



WILLIAM B. McGRATH, M.D.

One contemplates wistfully those epochs in which there was a blossoming of the genius of mankind, such as the Renaissance or the "Golden Age" of Greece.

Throughout such periods the artisan or the thinker had time and sponsorship to cultivate his talents to the utmost. Not so during the Industrial Revolution. Machinery has stolen leisure from the elite to give it to the laborer and the peasant. Outside the academic life, a gifted individual spends most of his waking hours in his executive capacity or in his profession. Even then he seldom if ever can devote unhurried and uninterrupted attention to the satisfactory completing of a given project. And fresh information about his specialty flutters around his head unremittingly, like scraps of

From: 207 E. Monterey Way, Phoenix, AZ 85012.

paper blowing in the wind.

We have warned that a man's career will be little more than his means of livelihood, and that he had better seek any further fulfillment in an avocation. We have also stressed that his first objective should be the nurturing of interest.

A second goal perhaps should be the refined appreciation of beauty. The trite saying, you are what you eat, is doubly applicable to the diet of the mind.

Slum dwellers and inmates of institutions and those who work with them seem to lack or lose the longing for beauty. One's soul is withered by a visit to the ordinary State hospital or prison: the gray dreariness of walls and drapes and uniforms and faces. There are hardly even any shadows.

These unfortunates look as if they have never taken a deep breath, have never known or wanted the experience of inspiration. Anyone who is unaware of ugliness or tolerant of it is somehow defective and quite likely to be brutish and mean.

Fashion, in this context, is correlative or prophetic of conduct, as are fads in dancing or music or especially advertising. Those who enjoy or promote vulgarity, as in dress or language or illustrations, are betraying an inherent inclination to coarse and inconsiderate behavior.

A person with any intelligence would refuse to consume rotten food or putrid meat. So with the mind. And the mind, as is true of a horse, simply cannot vomit except in nightmares and hallucinations.

People nowadays talk about techniques for the expanding of consciousness. There is none which even remotely competes with the assimilation of beauty.

This again takes time. One will get little enrichening from a poem if he reads it as he would a novel or a newspaper. To hear a symphony only once would be unfair to the composer and the orchestra and to the listener. Better to spend ten minutes contemplating and absorbing one painting than to hurry through the gallery because the tour bus is double-parked.

We have been sorting out such values and objectives as will sustain us when happiness may not be at hand, and which need not dwindle with age. Discernment of beauty is like the cultivation of interest in that it can be shared with others but is not dependent on them. As with interest, it cannot be lost or taken away.

NATIONAL HEALTH INSURANCE

WILLIAM F. SHEELEY, M.D.

Physicians generally oppose National Health Insurance.

But George Melloan, deputy editor of the *Wall Street Journal*, on November 17, 1975, warned that Congress will "drift" into NHI and it will do so at least in part, because of rising cost of the "health care industry." For he says, during the year ended this past July, while the Consumer Price Index was rising 10%, health care costs generally rose 12%.

Specifically, the hospital care component of the CPI rose 18%.

(In contrast, physicians' net incomes rose 6.2% during calendar year 1974 while CPI was rising 12%, according to Lawrence Farber, *Medical Economics,* November 10, 1975.)

Melloan thinks that hospital manning, a major part of the hospital-cost rise, suggests a "tendency to over-expand and over-extend." In the 7-year period, 1966 through 1972, hospital unit-labor costs did not rise extraordinarily relative to general labor costs, he says, but the number of hospital personnel per 100 patients rose 60% to 221.

He asserts: "Some of this substantial increase

in manning may have been associated with improvement in service, but not all."

Does this criticism of hospitals affect us physicians? Is it none of our affair? Can we just look on while hospitals take the heat?

No.

The brush which paints the hospital paints the the physician. In the minds of patient, citizen, and politician alike, we and hospitals are parts of the same. A slam against hospitals is a slam against physicians.

Further, if hospitals need improvement, the public expects us (and we should expect) to assume our measure of responsibility to effect that improvement.

And, still further, we are not all that innocent. We ourselves have demanded some of those very personnel increases Melloan challenges.

If, as charged, hospitals ignore principles of cost-effectiveness, if featherbedding and other wasteful personnel manangement practices divert health dollars from patient care, then we are obliged to act.

But where and how should we act?

Possible areas are many. To cite a couple: We have channels through our country and state medical organizations and our American Medical Association to the Joint Commission of Accreditation of Hospitals (which surely has responsibility here). Or our own Arizona Medical Association can work with the Arizona Hospital Association to develop review and consultative organs.

We need not climb so high, however, because the machinery for physician involvement in hospital manpower utilization and other management practices is immediately available to us locally; it is already in place and operating in every hospital with an organized medical staff. Our medical staffs can employ ad hoc committees, joint medical-administrative committees or similar devices to investigate, analyze, debate and recommend.

Perhaps we shall find the charges against hospitals unfounded; perhaps the increased costs reflect substantially improved care from prudently allocated monies. If so, these findings should be broadcast for the sake of hospital, physician and patient.

But we must move soon; we have little time to halt the drift into a National Health Insurance which, as Melloan asserts, nobody really wants.

FORCEFUL OPINIONS

Editor, The Arizona Republic:

The editorial concerning cyclamate and the Federal Drug Administration prompts me to amplify your comments.

In 1967, Dr. Joseph Cooper, of Howard University in Washington, asked: "For each additional measure of control added, does the taxpayer receive equivalent benefit? Does the insistence of the FDA on more and more data lead to more rational decision making, or does it merely establish that a bureaucracy has not been remiss in covering every contingency?"

The large question is, how much control is needed to assure effective control? Dr. Cooper goes on to say, "Bureaucratic regulation tends to acquire an elegance of its own — a baroque elegance. It propels into the future the protective devices engineered to assume that mishaps encountered in the past are not repeated, regardless of probability."

There is no question that rules, regulations, record keeping and reporting requirements "grow like barnacles on the hull of a ship, slowing its passage and adding to the cost of the journey."

Eight years ago, then FDA Commissioner Goddard announced that the FDA intended to move into the field of setting and enforcing standards of safety and efficacy for medical devices and instruments. This intention is about to become a reality with the Senate having passed enabling legislation and the House Internal Affairs Committee approving.

If Congress gives the FDA power to set "appropriate standards" and to preclear all instruments and devices "before they reach the market place," we will soon be as far behind other countries in instrumentation as we now are in drugs. The FDA has no experts to test new machines and it is doubtful that they could be hired. At this stage, the only experts are the inventors, designers and manufacturers themselves.

Physicians were disappointed in the government decisions to remove many useful drugs from the market. Examples are the bioflavinoids and the antibiotic mixtures. The opinions of the

National Research Council and National Academy of Science members who examined the pre-1962 medicines were nothing more than "informed judgments" and the FDA preferred not to entertain any more informed judgment type of advice than it must. No practitioners who used the medications and found them useful were consulted.

We have a situation unique in American jurisprudence where by regulation, the opinions of an agency of the government has the force of law.

The FDA doesn't necesarily follow the advice of its "experts." For example, the NAS/NRC recommendation was to ban two antibiotics known as Panalba and Novobiocin. The FDA rejected the Novobiocin recommendation but accepted the Panalba ban because its official disdain for that product was old.

This sort of behavior suggests that informed judgment, not only in the NAS/NRC, but within the anonymous offices of the FDA, was playing life and death decisions on medications, and soon instrumentation as well.

How much better it would be if ordinary practitioners had a voice in the FDA decisions. Their judgments would be much more comprehensible and palatable if practical medicine had a voice in the deliberations.

PAUL B. JARRETT, M.D.

Reprinted from "The Arizona Republic," Sunday, Dec. 21, 1975.

Book Review

Oxygen Measurements in Biology and Medicine. Edited by J. P. Payne, M.B., Ch.B., D.A., and D. W. Hill, M.Sc., Ph.D., F.Inst.P. Research Department of Anaesthetics, Royal College of Surgeons of England, London. Butterworths, London and Boston, 1975. 314 pp.

These papers are the proceedings of a symposium on oxygen measurements which brought together scientists from the world over. Oxygen requirements in high altitude flying and deep sea diving and the reliability of transcutaneous measurements of oxygen in the newborn are some of the investigative areas covered.

Several investigators reported on the reliability, design and acceptability of fibre optics oximetry.

The use of a few plastic fibres (three or four) instead of a large number of glass fibres is said to reduce costs and afford greater design flexibility.

Hugenholtz of Rotterdam, using on-line fibre optic oximetry, in 500 patients, most of whom had congenital cardiac defects, stated, "It is evident (from data presented) that within a few cardiac beats the entire diagnosis can be made without the withdrawal of blood for the off-line laboratory determination of oxygen saturation samples."

This is a delectable bevy of papers on the oxygen frontier.

John W. Kennedy, M.D.

ERRATUM

The correct title of the book reviewed last month is Symposium on Reconstruction of the Auricle. Vol. X; Editors, Tanzar, Radford C., and Edgerton, Milton T.: C. B. Wosby Co., 1974 pp. 312. $42.00.

GOOD SAMARITAN HOSPITAL HISTORY

DUANE BRADY
DIRECTOR PUBLIC RELATIONS
SAMARITAN HEALTH SERVICE

In cooperation with the Arizona Hospital Association, we present a series of historical sketches on Arizona Hospitals. It is planned to cover all the hospitals in the State. Your assistance in securing the data is earnestly requested.

—Editor

The Story . . .

The story of Good Samaritan Hospital is the story of human devotion brought into close focus. This dream of community service began the forepart of the century in the keen mind and strong heart of a frail, little woman, Miss Lulu I. Clifton. The Methodist Deaconess, a tuberculosis victim, came to Phoenix in early 1900, against the advice of her physician who didn't think she could survive the rigors of the arduous trip.

That Miss Clifton made the trip is our everlasting good fortune, for through her dedicated efforts and determination she communicated to others in what was then a small, rough, little Arizona town, the burning desire to establish a hospital that one day would be the state's largest private, non-profit, full-service institution. Miss Clifton was shocked at the lack of hospital facilities in Phoenix at the time. She had come from a background of field work with the medical college in Omaha, Nebraska. A Deaconess of the Methodist Episcopal Church, Miss Clifton gathered a group of Methodist men and entered into discussions as to how a new hospital might be started in Phoenix.

Good Samaritan Hospital's birth certificate is dated October 13, 1911, according to the Articles of Incorporation of the Arizona Deaconess Hospital & Home. The Articles were filed in the office of the County Recorder of Maricopa County, Phoenix, Arizona, October 18, 1911.

At this point, record and legend are entwined. Records show that these were the original incorporators:

G. H. Adams, Arizona's first Presiding Elder
S. J. Rogers, Presiding Elder
Robert S. Fisher, Pastor of the First Methodist Episcopal Church
Lloyd B. Christy, layman and banker
H. B. Wilkinson, layman and attorney

The original Deaconess Hospital, which stood until mid-year of 1969, was a rented structure — the Carol Apartments on Third Avenue, south of Van Buren Street. Problems of furnishing the community enough hospital beds were pressing even in those days when Deaconess had 15 beds.

Soon after these rented quarters were opened as a hospital, the Board began plans to build. The Arizona Republican of June 10, 1913, reported the appointment of a building committee and plans for a building to cost $20,000. Property was acquired at Tenth and McDowell.



Our First Building . . .

A fund-raising campaign was started. In 1918 and 1919, subscriptions had unpaid balances of $66,455 for the building fund and $47,000 for Life Membership pledges. These are shown in the records of the Phoenix Title and Trust Company and were pledged through a trust as collateral for the mortgage given Pacific Mutual



Life Insurance Company of California. The mortgage was dated March 26, 1919, and was put on Block 3, Bryan Place, for $45,000.

However, the total amount raised must have been considerably more than the balances shown. At the annual meeting on Tuesday, March 11, 1919, E. S. Gaddis, Financial Field Secretary, reported that more than 2,300 persons had pledged $200,000 since May, 1916.

Construction of the original West Wing (now known as B-Wing) and the front part of the center wing had been started in 1917. World War I halted construction after the first floor of the hospital's West Wing and the front of the center part were completed. Funds to continue building were not available until 1922. But on January 23, 1923, Miss Clifton's dream saw full realization when the Arizona Deaconess Hospital & Home was dedicated by Dr. N. E. Davis, Secretary of the Methodist Board of Hospitals and Homes.

Miss Marilla Williams, the hospital's first Superintendent, continued in her position until 1920 when she was succeeded by Miss Janet Burns, R.N. Mr. J. O. Sexson became Manager on October 23, 1924, and Mrs. Sexson became hospital Superintendent.

Early in 1924, the hospital had outstanding obligations of $107,000. By 1925, approximately $450,000 had been invested in the building and grounds. Outstanding obligations were approximately $70,000.

Nursing education has been important in hospital plans from the time the first student entered the former Arizona Deaconess Hospital Training School in March, 1919. The many improvements in the Nurses' Home, which had its beginning when the late K. S. Townsend advanced the money to build the first nurses' home in 1925, would not have been possible had the hospital not begun to prosper. (This nurses' home was used as a tubercular ward after the Utley property, present site of Sexson Hall, student nurses' residence, was bought.) Financial obstacles notwithstanding, the Utley property east of the hospital was bought for $26,000 as a site for a nurses' home.

In 1928 a new fund campaign successfully raised $120,000, and a mortgage was given to Phoenix Title and Trust Company to secure $125,000 in bonds. The added funds enabled the building of a new $300,000 wing. This successful 1928 fund drive was the hospital's last public subscription. At this time, the Board of Trustees voted unanimously to change the hospital's name to The Good Samaritan Hospital.

The 1930's . . .

Ground for the new $300,000 wing (then called the East Wing, now known as D-Wing) was broken in 1930. It was supposed to have been



finished by December of that year, but it wasn't formally opened until January 25, 1931. This wing featured a great innovation – the patient's silent eall system, eliminating irritating buzzers. A laundry was also built. Strong financial steps insured this solid expansion.

Year after year, Mr. Sexson reported sueeessful operation of the hospital until 1931; but from 1931 to 1936 Mr. Sexson had to report how much the hospital operation had gone in the red. The number of patients decreased during this time, although expenses did not. Mrs. Sexson, still Superintendent of the hospital, says at times she did not even let the doetors know how few patients were in the hospital for fear they would think they would close. By 1932, hospital improvements and grounds were valued at approximately $800,000. Indebtedness, including $32,000 for current bills, totaled $282,000. Donations during that year were only $19,795.19.

Faith and bull-headed courage of a staff, underwritten by sheer dedieation, sustained the hospital. Members of the Board of Trustees at times personally endorsed notes for the hospital. Several general salary cuts were taken, and donations were solicited but not on a public basis. Many generous persons, some of them anonymous, contributed to funds that made it possible for Good Samaritan Hospital to keep its doors open.

The financial tide turned in 1936. For the first time since the beginning of the hospital, operating income was greater than expenses.

The expansion and improvement in Good Samaritan Hospital could not have been made through the years if its financial health had not improved in 1936. Added to the favorable operating income were many donations, legacies and gifts, notably from James Aldrich, William B. Cravath, George H. Maxwell and others.

Since 1936 the hospital's annual reports have made much more interesting reading, both financially and technically. From 1936 these records show a steady increase in the number of patients cared for, the number of births and equipment purchased. Constantly increasing capital expenditures, added to regular expenses, have meant that no great surplus of cash has been available for instant use.

The 1940's . . .

Building projects stayed in the baekground, and equipping the hospital and reducing bonded indebtedness were Good Samaritan's chief projects from 1938 to 1943.

New equipment was purchased, the kitchen was completely remodeled, enlarged and finished; once again the Surgery Unit was done over and enlarged and other departments were redone; however, no major building was started.

Financial strain relaxed in 1943 when the last of the bonds was paid and the mortgage was released. Another highlight of 1943 was the allotment of $50,414.16 which the federal government made to the hospital's school of nursing under the Cadet Nurses Program.

When the time came in 1945 to plan the building of Sexson Hall, $75,000 in government funds were available for this purpose. Total cost of the hall was approximately $225,000, excluding equipment. Government funds helped pay part of the cost for the new nurses' home, Sexson Hall.

The report at the 1945 annual meeting showed a balanec of $259,000 unpaid on the nurses' home contraet and an additional $91,000 estimated for equipment, remodeling and enlarging the hospital's obstetrical facilities. This left a deficit of more than $37,000. By the time Sexson Hall

was finished on its present site in 1946, it had cost $350,000.

The Hall was named in honor of Mrs. Hazel Sexson and the late J. O. Sexson, whose drive and foresight played such great roles in the hospital's expansion. Government funds were also obtained to pay part of the cost of an additional 69-bed wing (now E-Wing), a 35-bed addition to Sexson Hall, added surgeries, a refrigeration system and the new West Wing (A-Wing).

The 1950's . . .

Next step in the hospital's story of growth was another building and improvement program which began to take shape in 1952. The projects included enlarging the South Wing (now C-Wing) to provide additional room for Administrative and Business Offices, a record room, a post-operative Recovery Room and new surgeries. The project also included remodeling the first and second floors of the hospital and installing a new steam absorption refrigerator system, first of its kind in any western hospital. All of this totaled more than $500,000.

As the Valley's population grew, the demand for beds increased. In 1952 the Board of Trustees decided to build a new east wing and chapel. Cost of this wing (now known as E-Wing) was $1,350,000. Government funds available through the Hill-Burton Hospital Construction Act amounted to $494,500.

A chapel was made available to patients, families and friends through the kindness of C. O. Vosburgh of Buckeye who donated approximately $45,000. The stained-glass windows along the side of the chapel were donated by the Phoenix Title and Trust Company from the old First Methodist Church building which that company had bought. These windows were a gift to that church by Lloyd B. Christy, one of the hospital's original incorporators.

The hospital staff had hoped to open this new wing in the fall of 1953, but strikes delayed completion until January, 1954. With the completion of this building project, the hospital had 320 beds and 42 bassinets.

Growth of the hospital's patient roster and staff had caused an increasingly pressing parking problem. A program was started to acquire space in the block south of the hospital between Tenth and Eleventh Streets and Brill and Willetta. All of this block except Lot 4 and the eastern two feet of Lot 3 cost the hospital $262,-255.98. The property, black-topped, at a cost of



$34,600, was then available for parking.

The nurses' home grew again in 1955, thanks to plans made in 1954. In January of 1955, $84,000 worth of bids to build this addition were accepted. This provided space for 35 more student nurses who made up a student body of between 175 and 180 young women and men.

Again, population and patients caused pressure for additional beds. The Board of Trustees once more considered building another wing, this time a new six-story west wing (now known as A-Wing). In 1957 a contract was let for the wing construction which cost $1,981,335.24. Hill-Burton funds paid $500,000 of this cost. The Ford Foundation granted $150,000. This added two floors to the obstetrical facilities.

In this wing, the entire first floor houses labor and delivery rooms, with space for doctors and a waiting room for fathers. The third floor provides rooming-in service as an added feature of the hospital's maternity facilities. The fourth, fifth and sixth floors house medical and surgical patients, bring the hospital's bed capacity to 441 beds and 68 bassinets.

The 1960's . . .

In 1960, a new service building housing a laundry, maintenance quarters and the housekeeping department was finished. This building is also used to store medical records and supplies.

During 1960 the hospital's handsome new lobby was finished and the Admissions Office was relocated. The Nursing Office was expanded, and the Administration Offices and the meeting room for the Board of Trustees were constructed. Adjoining the lobby is a glass-walled Auxiliary Gift Shop. The well-equipped Intensive Care Unit (Arizona's first such unit), the Medical Records area and more space for surgery were completed.

In the summer of 1961, the southwest corner of Willetta and Eleventh Streets, which faced the already-paved parking area to the north, was acquired and made available as another hospital parking area. Also, part of the block across Eleventh and Brill below the nurses' home was set up for visitors' parking. Each of these 80-car lots cost approximately $75,000, including purchase price, razing, leveling, paving and lighting.

Included in these projects was one lot on which stood a house that was in good condition. This was remodeled and used as a Day Nursery operated by the hospital for children of hospital employees.

Also, 1961 saw the finish of a ground-floor addition to B-Wing, housing a spacious Cafeteria with a series of dining rooms for employees and guests and costing approximately $90,000. The new $15,000 Physical Medicine Department was also finished in 1961. The hospital's Coffee Shop was redecorated, and new areas were provided for the Social Service Department, the Licensed Practical Nurse Supervisor and the Public Relations Department.

On June 30, 1961, ground was broken for the hospital's two-story F-Wing. On the first floor of this wing are modern and convenient Emergency Room facilities with nine treatment areas for eleven patients. In time of disaster it is estimated this emergency area can give immediate treatment to at least 20 persons simultaneously. Also on the ground floor of the F-Wing are facilities for the hospital's Outpatient Clinics. These have expanded from the first clinic, which was for cardiac patients, into service that is given to psychiatric, orthopedic, obstetrical, medical, surgical and gynecological patients. On the main floor of the F-Wing is a 46-bed children's wing. This doubled Good Samaritan's total Pediatric facilities and provided 89 Pediatric beds.

Hospital planners also included in their expansion blueprints an expanded X-ray Department located on the first floor of the new F-Wing. Complex and delicate equipment and space in the X-ray Department make it outstanding. The hospital accepted two bids for the F-Wing, one for $861,500 for the wing itself, plus a separate bid of $27,700 for moving the Vosburgh Chapel to the north end of D-Wing.

In 1963 the Institute of Rehabilitation Medicine was established on D-5, giving Good Samaritan an opportunity to provide even a broader spectrum of services to the community. This same year on E-5 and E-6, 64 additional beds were added to the hospital.

Considerable remodeling of wings A, B, C and D was seen in 1964. Also undertaken in 1964 was the D-5 North Wing which provided intern quarters within the hospital and a department of Nuclear Medicine.

Late 1965 saw the completion of a completely redone Central Service, Pharmacy, Medical Records and Laboratory. These areas became models for efficiency and attractiveness within hospitals.

One of the most meaningful and comprehensive constructions undertaken started in Medicine, Extended Care Facility and Mental Health Unit. This building is on Willetta, immediately south of the main hospital and has a total of 120 beds. The entire second floor is given over to Rehabilitation Medicine, including Speech Pathology and Audiology, Physical Therapy and Occupational Therapy. It is rated as one of the top rehabilitative units in the country. Concurrent with the construction of this building was the new parking structure which was started and completed at the same time. This parking area provides space for 500 automobiles and is used by patients and visitors.

Nineteen hundred sixty-eight saw the beginning and completion of additions to the F-Wing on the far eastern terminus of the building. The first and second floors of F-Wing had previously been completed. The third, fourth, fifth and sixth floors were added, bringing the total bed capacity of Good Samaritan Hospital to 724 beds. Eight of these beds are in deluxe rooms, providing an atmosphere resembling the patient's own home.

The new Cobalt Unit, which is east of the hospital on McDowell Road just off of the Emergency and Outpatient entrances, has been completed. This unit is outstanding in all respects, providing the patient with a comfortable, encouraging setting.

Also in 1969, the first human transplant was undertaken successfully at Good Samaritan Hos-



pital, this being a kidney transplant. Miss Violet Lopez had the distinction of being the first kidney recipient. Since then a number of similar kidney transplants has been undertaken at Good Samaritan.

Blueprints for the future include a new and spacious artificial kidney center, a model residency general practice office and program, additional research and teaching facilities, rooming areas for visitors, etc.

Background and Description . . .

Good Samaritan Hospital developed a medical internship and residency program in the early 1950's and now carries a complement of about 100 interns, residents and fellows at various levels of their postgraduate education. It is very active in the training of other health care professionals as well, including medical technologists and paramedics.

Through its Institute of Rehabilitation Medicine, Good Samaritan has been a key participant in the development of a prototype spinal injury care program that has national implications. Likewise, its Institute for Cardiovascular Diseases and open heart surgery programs have received national attention and acclaim. It is also known in the Southwest for its extensive cancer treatment programs and is developing into one of the region's key cancer treatment centers.

Following is a capsule of the special services offered by Good Samaritan, both revenue producing and non-revenue producing:

Pediatric habilitation service; learning disabilities center; radiology and nuclear medicine, including X-ray therapy, cobalt therapy, radium therapy, diagnostic and therapeutic radioisotope facilities and diagnostic radiology; operating room, including open heart facilities, and recovery room; laboratory; including histopathology lab; emergency and outpatient department; pulmonary function laboratory; obstetrics and gynecology; institute for maternal and perinatal medicine respiratory therapy; rehabilitation medicine, including inpatient and outpatient rehabilitation, physical therapy, psychology, speech therapy, and spinal injury service; pharmacy, including poison control center; neurophysiology; home care program; audiology; mental health service for psychiatric inpatients and outpatients; cardiovascular diseases institute, including pacemaker clinic and pediatric cardiac services; kid-

ney center, including inpatient and outpatient renal dialysis; gastroenterology institute; family practice center; specialty nursing areas, including intensive cardiac care unit, metabolic unit, newborn and premature, and pediatrics; abortion services; and premature transport and intensive care program.

Service Area . . .

Located in downtown Phoenix, Good Samaritan Hospital is a regional medical center serving the specialty and general acute needs of the Phoenix metropolitan areas, Maricopa County, the State of Arizona, and the Southwestern United States. The hospital's primary service area is Maricopa County, which accounts for about 90 percent of its admissions. The remaining 10 percent of admissions are derived from the hospital's secondary service area, which includes the rural parts of Maricopa County (one percent), other parts of Arizona (eight percent) and other Southwestern states (one percent).

The population growth in the hospital's primary and secondary service areas is among the highest in the country. Arizona is one of the fastest growing states, having experienced a population increase of about 20 percent from 1970 to 1975. During the same period, Maricopa County has grown at an annual rate of about 6.5 percent, increasing from 960,000 to more than 1.35 million.

The population reflects the growth and developing character of the area, with a lower median age (about three years below the national median), higher percentage of children, and large number of newcomers.

The economic growth of the state and county has paralleled the population growth. In Maricopa County, new business and industries are attracted by an attractive tax situation, healthy economic climate, available labor market, close proximity of a major university, the fact that the county is a distribution center for the Southwest, and the warm, sunny year-round weather. Also, because of the weather, the county and state continues to be attractive to a large number of tourists each winter and to senior citizens seeking retirement living in the many retirement communities.

In addition to serving the regional, specialty needs, Samaritan Health Service serves the general acute needs of local communities in Maricopa County through its three community hospitals.

General Acute Care . . .

Few hospitals in this country have had the opportunity or been able to develop as swiftly and dramatically as has Good Samaritan Hospital. This is not a matter of size alone, for Good Samaritan was a good sized hospital even 10 or 15 years ago. Rather, it is a development which has accrued from a combination of greatly increasing medical and other professional talent; from increasing the available range of services extensively; from increasing the physical size significantly; and more recently, by formation of the Samraitan system with the opportunity to merge and/or acquire three other hospitals in the Phoenix area and to provide management services to other hospitals in the northern trade area of Arizona.

As a result of these developments, Good Samaritan Hospital has emerged from an average community and local area hospital to a noteworthy hospital center, a center that provides a well-balanced community and specialty hospital service, one which is serving Arizona and the southwestern part of the nation (as well as the local area) in an exemplary manner, with a very broad range of services and facilities staffed by exceptional professional skills. Concurrently, it has broadened its role in professional education significantly and has set its sights on a future important role in research. Much credit is due its leadership for the foresight, wisdom, and courage displayed in bringing it about.

System — Background and Description . . .

Samaritan Health Service grew out of the merger in 1968 of two well-established, major hospitals in Maricopa County: Good Samaritan Hospital in Phoenix, the state's largest acute care hospital and Southside District Hospital in nearby Mesa, a rapidly growing community in the Phoenix metropolitan area.

Southside needed an expanded financial base in order to build a new hospital to replace its cramped, outmoded, 50-year-old facility; Good Samaritan needed a broader operational base for optimum utilization of its management structure and to cultivate referral facilities in the outlying areas for patient reference to its 715-bed major medical center in the heart of the city.

In less than two years, two other Maricopa County community hospitals had been brought into the emerging Samaritan system along with several rural hospitals in northern Arizona. Samaritan Health Service, a non-profit corporation, was formally incorporated in March of 1970.



The resulting health care delivery system, Samaritan Health Service, is comprised of Good Samaritan Hospital, one of the leading medical centers in the Southwest; Desert Samaritan Hospital and Health Center, a modern 273-bed hospital-outpatient facility built to replace Southside District Hospital; Maryvale Samaritan Hospital, a 147-bed hospital in west Phoenix; Navapache District Hospital, a new 35-bed hospital in Lakeside, Arizona, the heart of the rapidly growing White Mountain area of northeastern Arizona; White Mountain Communities Hospital, a 25-bed facility in Springerville, Arizona, on Arizona's eastern edge of White Mountains; Grand Canyon Clinic, a facility converted from a 22-bed hospital owned by the U.S. Park Service at the Grand Canyon; and Air Evac, a pioneering air ambulance service frequently described as a flying intensive care unit that is used by physicians throughout Arizona and the Southwest.

Samaritan Health Service is more than a series of independent hospitals brought together under one management wing to effect certain economies of scale. Governed by one Board of Directors, it melds together the urban, specialty, teaching hospital complex with the suburban and rural community hospitals. The management and clinical expertise in the urban center is available to the smaller hospitals as well. Its operations are confined to one well-defined geographic area (Arizona) and concentrated in one general trade area, of which Maricopa County is the center.

The system has been able to control the proliferation of expensive special services and place them where they would be most effective. It has been able to spread the costs of a highly specialized urban hospital over a much broader financial base. And it has been able to focus its management talent on the development of an integrated health care delivery system that facilitates the patients' access to the best medical care available, even in remote geographic areas.

Capital financing, insurance risk pooling and bulk buying are three obvious areas where this multi-hospital system's approach has proven beneficial. Long-range planning, program development and the adaptation of new technology are others.

Two innovations are particularly noteworthy: the hospital cooperative laundry and the print shop.

The multi-hospital laundry grew out of the need in the late 1960's to replace the cramped, obsolete laundry at Good Samaritan and to build

a new one to accommodate the new Desert Samaritan Hospital and Health Center. Other hospitals in the Phoenix area were also faced with the problem of growing obsolescence in their laundry service and rapidly rising costs.

Rather than invest in small, individual facilities that would satisfy immediate needs only, Samaritan was able to construct a modern, automated hospital laundry plant with sufficient capacity to handle the needs of most of the major health care facilities in the area. By building in this larger capability and expanding the service, it was possible to lower the per-unit cost of laundry service for all participating hospitals. The facility, though still owned by Samaritan Health Service, is now operated by a cooperative of participating hospitals and serves the Samaritan hospitals as well as four other hospitals in the county and one hospital in Tucson.

Hospital printing and forms control was consolidated early in the life of Samaritan Health Service. Through a process of standardizing as much as possible the forms used throughout the hospitals, a system emerged which may make it beneficial for other non-Samaritan hospitals to share the Samaritan printing facilities and forms control system.

Following are other functions that have been centralized and shared among the operating entities of Samaritan Health Service.

Financial services, including budgeting, central accounting, payroll, accounts payable, accounts receivable;

Housekeeping, in the areas of management, direction, coordination and policy;

Food Service, including dietary, purchasing, management, policy and coordination;

Biomedical Information, the development of sophisticated, integrated patient monitoring systems;

Materials Management, including computerized inventory control, central warehousing, purchasing, distribution and cost control;

Data Processing, application of a hospital information system with the latest in computer technology;

Human Resources and Development, including personnel, education, in-service development, employee relations, recruiting, wage and salary administration and benefits;

Biomedical Communications, which includes medical illustration, photography, graphic art



presentations for staff physicians and plays an important role in medical education;

Planning, which covers the whole spectrum of health care delivery and future directions;

Facilities Engineering, including supervision of physical alterations, plant maintenance and construction;

Public Relations, which coordinates all media contacts, hospital publications and presentations, public information programs, community and professional relations, and internal as well as external communications;

Patient Services, a prototype program, centrally directed to deal with admissions, patient problems, billing, insurance and bed allocation;

The People . . .

The physical plant of the hospital actually is less than half the story of its life of service. The people who play major roles in starting, maintaining and staffing a hospital also play a major role in its success.

Good Samaritan Hospital has been fortunate through the years to attract people of dedicated purpose to the Board of Trustees, Administration and staff. Here are a few of the people who are profoundly associated with Good Samaritan's founding and growth.

Miss Lulu I. Clifton, the Methodist Deaconess, who within a year of her arrival in Phoenix started plans for what eventually became the Good Samaritan Hospital of today. Miss Clifton died April 30, 1959, in Phoenix.

Others in the early days who played major



roles in guiding and helping the hospital were Miss Marilla Williams, also a Deaconess and registered nurse, the first Superintendent; and Miss Janet Burns who succeeded Miss Williams as Superintendent in 1920. John Bowman in turn succeeded Miss Burns in 1923.

Mrs. Hazel R. Sexson became the hospital's Superintendent in 1924. The late J. O. Sexson became the hospital's Manager on October 23, 1924. From then until his death on June 19, 1953, Mr. Sexson was outstanding in leading the hospital through a period of trials, growth and expansion. Mr. Sexson was a natural organizer, leader and optimist. The two organizations on which he poured out his boundless energy and imagination were his church and hospital. With the support of his trustees, he enlarged the hospital and its services.

During the crucial early 1930's Mr. Sexson's ability to interest others in the hospital and his efforts to get donations were the prime factors that brought Good Samaritan Hospital into relative financial security.

At various times, Mr. Sexson held the office of President of the Board of Trustees, Business Manager, Manager, Superintendent and again President of the Board, an office he held at the time of his death. He stayed on as leader of the Board at the Trustees request after he reached 70.

Mr. Sexson was ably assisted by his wife, Hazel, who, until December, 1934, was officially connected with the hospital. From 1934 until Mr. Sexson's death, Mrs. Sexson gave him aid and support, a practice she has transferred to the hospital as one of its most active friends. She is an Active and Life Member of the Women's Auxiliary.

Other early Phoenicians who were the mainstays of the hospital included H. B. Wilkinson, President of the Phoenix Title and Trust Company, first President of the Board of Trustees. Mr. Wilkinson continued as President during the early years and until the first unit of the present hospital was completed in 1923.

K. S. Townsend, mentioned before, was one of the early Board members and served as Vice President and President for more than ten years until his death in 1934. Many times he advanced money to the hospital for operating expenses. He built the original nurses' home with monies from his own pocket. Not the least of his efforts were the many hours and thought he gave to the work and needs of the hospital.

James Aldrich, likewise generous with his time and money, was another early booster of the hospital. He willed an 80-acre farm to Good Samaritan Hospital, the proceeds of which built the east wing.

The late Guy M. Hanner, hospital Administrator from 1946 until his death October 24, 1960, brought to his position the same drive and enthusiasm which had helped Good Samaritan during its earlier years.

Mr. Hanner's first wife, the late Grace E. Hanner, died in 1955. Mr. Hanner remarried in 1957 and shared his growing dreams and idea of hospital progress with his second wife, Loretta



Anderson Hanner, former Director of Nursing here, and now Dean of the College of Nursing, Arizona State University.

Stephen M. Morris came to the hospital as Administrative Resident in June, 1953, after receiving his master's degree in hospital administration from Washington University, St. Louis. He was made Administrative Assistant July 1, 1954, and Assistant Administrator January, 1956. He was elevated to the administratorship in October, 1960. Mr. Morris became President of Good Samaritan Hospital in March, 1966, remaining in this capacity until May of 1969 when he became President of Good Samaritan Hospitals, Inc., a corporate organization designed to coordinate the activities of the nine hospitals currently comprising the system — Good Samaritan and Maryvale Samaritan Hospitals, Phoenix; Grand Canyon Hospital, Grand Canyon; Holbrook Hospital, Holbrook; Josephine Goldwater Hospital, Show Low; Navapache Hospital, Lakeside; Northwest Hospital, Glendale; Southside Hospital, Mesa; White Mountain Hospital, Springerville. The need for this corporate system was brought about by acquisition of Maryvale and Southside in the summer of 1968. This was done to combine professional talent, as well as to effect economies and efficiencies within the organization and avoid duplication of services and facilities within the community.

COLONIAL MEDICINE AND BENJAMIN FRANKLIN

HAYES W. CALDWELL, M.D.

We conclude, in this issue, the entertaining account of Franklin's medical observations.

In Poor Richard's almanac, Franklin described an interesting method Indians used in the treatment of war wounds: "Powder from the rotten heart of a black oak is applied to the wound immediately." "Some Indians carry some of this powder when they go to war. They also use a fungus which grows on the old oak and is gathered in August or September and kept dry. It is beatened into a powder and applied locally to the wound." Modern antibiotics have been harvested from the soil samples of molds in a worldwide search for new antibiotics after penicillin was discovered.

Another Franklin letter will interest the medical orientated reader:

Honoured Father and Mother,

I apprehend I am too busy in prescribing and meddling in the Dr.'s Sphere, when any of you complain of Ails in your letters: But as I always employ a Physician my self when any Disorder arises in my Family and submit implicitly to his Orders in every Thing, so I hope you consider my Advice, when I give any, only as a Mark of my good Will, and put no more of it in Practice than happens to agree with what your Dr. directs.

Mrs. Stephen's Medicine for the Stone and Gravel, the Secret of which was lately purchas'd at a great Price by the Parliament, has for its principal Ingredient, Soap, which Boerhave calls the most universal Remedy. The same Salt intimately mix'd with Oil of Turpentine, which you also mention, makes the Sapa Philosophorus, wonderfully extoll'd by some Chymists, for like purposes. As to Honey and Mollasses, I did not mention them meerly as Openers and Looseners.

In colonial America many people practiced medicine, often they were self claimed doctors, frequently writers and ministers engaged in providing medical advice.

In addition to founding other public institutions, Franklin was a founder of the Philadelphia General Hospital. The need for such a hospital was first appreciated by his friend Doctor Thom-

as Bond. Bond had tried to raise the necessary funds and later described the futility of his effort, "each prospective donor invariably would ask what Franklin felt of the undertaking and when Bond confessed that he had not consulted him, they replied they would think about his scheme, but gave him nothing." Franklin investigated the need for a hospital and the required sum of 2,000 pounds. He turned to the legislature and asked if they would provide matching funds if the public was able to raise one half the amount. Apparently the legislature thought the suggestion safe and they agreed to provide funds to match a public commitment. This public subscription matched by the legislature provided funds to start the Philadelphia General Hospital. This represents an early matching fund arrangement for raising money for public endeavors. The Penn Family, a common and thorny Franklin adversary, refused to give a requested lot for the hospital but offered instead a lot judged unsuitable. It was difficult from the beginning for the hospital to be self-supporting. Supplementary support was provided by lotteries, stage plays, and theatrical presentations. While in London representing the colony in its dispute with the Penn Family, Franklin solicited funds for the hospital from friends. Philadelphia physicians often provided their services free. The Pennsylvania Hospital was the first public supported charitable hospital in America. Franklin secured a seal in England for the hospital. He also helped draft the laws governing the hospital and composed the inscription for the cornerstone. Modern hospital management and hospital patients will be amused at some of the unusual patient rules. "All patients, when cured, sign a certificate of their particular case and the benefit they received in the hospital, for publication. There was to be no swearing, cursing, drinking, disorderly conduct, or indecent exposure. No patient was allowed to play cards, dice or other games within the hospital. Patients able to assist in nursing or washing others, or ironing linen were required to do so if the matron requested." Spinning wheels were provided by the managers for the employment of women patients able to use them.

A committee of physicians and surgeons, with a Committee of lay Managers, twice a week visited the sick in the hospital, examined cases, admitted and discharged patients. This was an early peer review committee. Ben Franklin served on the Pennsylvania Hospital Weekly Committee. During the first year, approximately 64 patients were admitted. Over the first two years, 117 cases were admitted. During the first year there were five deaths and "32 cured and discharged." The hospital manager publicly appealed to the "rich widows and other single women in town" to raise funds for drugs. The hospital records of those charitable gifts by the women of Philadelphia have been preserved and now are justly a source of family pride in Philadelphia.

Some hospital funds are still "matched" by private donations. The physicians and other citizens, including Ben Franklin, often assumed the financial burden of hospital patients unable to pay in the early years of the Philadelphia General Hospital.

The hospital report on June 4th, 1752 follows:

During our month's visitation John Poor being cured, was discharged; and Katherine Shannon's child also cured, she was discharged with the child.

It was agreed to admit Angus McDonnel a dropsical person, if his friends will engage to indemnify the hospital and City from all charges that may accrue on his death or removal to the place of his residence.

It was also agreed to admit a Lunatick from New York at the rate of 10s. per week.

We received three pounds from Dr. Thomas Bond on account of the board of Thomas Stow, which we delivered to the Matron.

Henry Fetter being cured, was discharged.

The physicians have attended constantly on the days of our visitation.

B. Franklin

Another addition to colonial medical science was a medical library at the Pennsylvania Hos-

pital. Funds for books were raised from student fees and gratuities set aside for this purpose. Later, physicians donated their personal medical libraries. Franklin's letters record that he acquired medical books in England for the library.

The Pennsylvania Hospital was used for teaching and patient care by the first medical school, the University of Pennsylvania. The Philadelphia General Hospital has grown and continued to make contributions to medicine. During its first two years, 117 cases were treated and now it has 900 hospital beds with 120 beds for chronic illness and serves as a teaching hospital for two medical schools. During past years it has provided teaching beds for five different Philadelphia medical schools, before each built their own hospital. Franklin, being a strong advocate of women's education, would be delighted that one of these schools, Medical College of Pennsylvania, was organized for training of women as physicians. Four doctors made up the first staff of the Philadelphia Hospital. Today there are approximately 500 staff members and more than 200 interns and residents. The first medical school was slow to receive favorable recognition in colonial America. Twenty years after it was started in Philadelphia, Thomas Jefferson wrote about medical education in America: "To study medicine, one must go to Europe" he said, but then proceeded to count the disadvantages of sending a youth to Europe. Among the evils enumerated, that the student would be exposed to: "He would learn drinking, horse racing, and boxing which are peculiarities of English education." Jefferson later founded the University of Virginia with its medical school.

The University of Edinburgh was the leading English medical school in that period. Franklin's boarding house in London became a frequently used stopping off place for young students of medicine going to Edinburgh. Among those to become prominent later was John Morgan, who helped organize the University of Pennsylvania medical school. Morgan was named the professor of theory and practice of medicine. Congress later appointed him Director General of Hospitals and Physician in Chief of the Army. Increasing complaints against him led to his removal from these posts in 1777. He afterwards confined himself to work at the hospital and medical school. Other Philadelphians included Cadwalder Evans, a medical and political friend of Franklin, who also supported the Philadelphia General Hospital. Preserved letters record that Benjamin Rush and his friend Jonathan Pott, both later prominent colonial physicians, requested Franklin to write letters of recommendation for them to the University of Edinburgh Medical School. Later, he wrote them an interesting letter: "Letters of recommendation may serve a stranger for a day or so, but where he is to reside for years, he must depend on his own conduct which will either increase or totally destroy the effect of such letters. I take the freedom, therefore, of counseling you to be very circumspect and regular in your behavior at Edinburgh, for the people are very shrewd and observing." This could serve as a footnote to any letter of recommendation.

Some medical friends of Franklin in England, are interesting and important in the history of science and medicine. Among these are Joseph Priestly, John Fothergill, George Baker, John Kelley and William Heberden. Heberden wrote about many medical problems: Osteoarthritis sufferers with hand crippling recognize "Heberden's nodes." He also described, in 1768, the symptoms of angina pectoris. With John Fothergill, they described the changes of arteriosclerosis in the coronary blood vessels although they did not connect coronary arteriosclerosis and angina. In 1769, John Baker, the King's and Queen's physician and President of the College of Physicians, described lead poisoning accurately. In his published medical paper, he acknowledged consulting Franklin. Fothergill, Franklin's personal physician, generously provided private funds for Joseph Priestly to carry on his investigation of gases. Priestly, educated for the ministry, discovered oxygen, nitrogen, ammonia, nitrogen oxide, hydrogen, chloride and sulfur dioxide. He foresaw the value of oxygen in treat-

ing respiratory problems. Priestly also was an active electrieity experimenter and correspondent with Franklin in the study of his new science. After the American Revolution, Priestly's home, church and laboratory were burned by rioters in Birmingham, England. Priestly then moved to Philadelphia in 1794 to join his three sons living there. He later built a home and a laboratory in Orthumberland, Pennsylvania and died there in 1804. John Kelley, a Franklin friend, was Professor of Medicine at Oxford.

Comments about Franklin's health and the illnesses among family members and the way they were treated are interesting. The exchange of letters contains many referencs to these family problms. We have already noted that a son died from smallpox. Franklin's wife suffered with one or more strokes before she died. She deseribed these strokes and the treatment provided by Philadelphia doctors in preserved letters sent to Franklin while he was in London. His friend and co-founder of the Pennsylvania Hospital wrote to Franklin, "Your good Mrs. Franklin was affected in the Winter with a partial Palsey in the Tongue, and a sudden loss of memory, which alarmed us much, but she soon recovered from them, tho her constitution in general appears impaired. These are bad Symptoms in advanced Life and Augur Danger of further Injury on the nervous System. However you may depend every Relative of yours will engage my Particular Care and Attention." Franklin consulted physicians in London about her illness and relayed suggested treatments to her. These responses to her medieal questions required eight to ten weeks minimum time because of slow boat passage. As a further example of the slow communication at that time, more than four months elapsed from the time of her stroke before Franklin learned of her illness. He was in London when she died.

For the most part, Franklin enjoyed excellent health and led an active life until his death. There are records of his being thrown from a horse on two occasions and once dislocating his shoulder. After his arrival in London, 1757, to represent the eolony of Pennsylvania in its dispute with the Penn family, he was ill for an extended period of time and was treated by John Fothergill. Franklin's letter described his illness as one that lasted for more than six weeks and characterized by "pleurisy, respiratory infection, dizziness and headaches." Fothergill bled him on one occasion of eight ounces of blood "taken from the back of my head" to relieve the dizziness. Five days later he was "bled again of sixteen ounces which apparently was of great service," but he was "left a little weak." Franklin later wrote that he had been "cut, blooded, physic, and at last blistered" and "grown a little thin with my illness." He also reports in letters attacks of gout which twice confined him to bed for periods of a week. During the remainder of his adult life he had recurring attacks of gout. He described one gout attack and the treatment in a letter to his wife: "In the Easter Holidays being at a Friend's House in the Country, I was taken with a Sore Throat, and came home half strangled. From Monday till Friday I could swallow nothing but Barley Water and the like. I was bled largely and purged two or three times. On Friday came on a Fit of the Gout, from which I had been free Five years. Immediately the Inflammation and Swelling in my Throat disappeared; my Foot swelled greatly, and I was confined about three Weeks; since which I am perfectly well, the Giddiness and every other disagreeable Symptoms have quite left me." These gout bouts recurred even when he was an old man serving his country in France. The diagnosis of gout was eommon and fashionable in that age. His gout finally resulted in a bladder stone that was very painful during his last years. To relieve the bladder stone pain during his travel from Paris to the French Coast enroute to America, one aceount states that Marie Antoinette provided him with her personal carriage drawn by the King's mules to provide great ease and comfort of travel.

After returning to Philadelphia, Franklin was promptly eleeted to the Constitutional Convention whieh met in Philadelphia May, 1787. At the age of 82, for a period of four months, he daily attended the meetings despite ill health. Shortly after the convention closed, his health deteriorated rapidly. For bladder pain he was forced to take opium for relief and he eomplained it was difficult for him to eoneentrate due to the combination of pain and opiates when reading or writing.

Franklin's terminal illness has been described as follows: He eomplained of pain in his ehest, became feverish, and it was evident that he was suffering an attack of pleurisy. After ten days of agonizing pain he seemed to momentarily reeover. His cough vanished, and he rose from the bed to let his daughter Sally make the bed so

he might "die in a decent manner." When Sally said that she was praying that he would get well and live many years more, Franklin quietly replied, "I hope not." A few hours later "an abscess in his lung burst and it became more and more difficult for him to breath." At 11:00 p.m., 17 April 1970, "he passed quietly into history." This final conversation between father and daughter 200 years ago outlines the social and medical parameter of a very modern medical topic that is increasingly commanding our attention — the right to die. From this historical description of Franklin's death, it would be likely that he died with one or several pulmonary emboli. Pulmonary thrombosis and embolization was first described many years after Franklin's death by the French physician Laennec.

Some readers of these pages might wonder if Franklin was all that great and possibly would like to follow with their own reading some other Franklin fields of interest. Some of them have been enumerated here. I would recommend the use of Franklin's own letters in pursuing these fields of his interest. The collection by the Yale University Press was made possible by a grant from Henry Luce. They will be bound in approximately 44 volumes when completed. Nineteen volumes have been published.

TOPICS OF FRANKLIN'S INTERESTS GLEANED FROM HIS LETTERS

1. EDUCATOR
 - Self Education efforts and technique
 - University of Pennsylvania
 - Library, public and contribution of books to Harvard and University Penn library
 - Hospital
 - Education of women
 - Education of Negroes and Indians
2. PUBLISHER
 - Almanac
 - Newspapers — multiple — chain owner — magazines
 - Freedom Speech — value for newspaper
3. LETTER WRITER
 - Include letters to friends — Papers, family, government
 - Other Founding Fathers (as Jefferson)
4. DIPLOMAT
 - Service as Colony Representative for Pennsylvania, New Jersey, Georgia and Massachusetts
 - Envoy to persuade Canada enter war with colonies
 - Revolutionary War Representative in France and other European countries
 - Peace negotiations Paris
 - Boundary map between colonies and Canada drawn by Franklin
5. FRANKLIN LADIES — LETTERS TO OR ABOUT
 - Mistress — French, English, Wife, etc.
 - Mother — many female friends — Polly Baker
6. CIVIL RIGHTS
 - Negro
 - Indians
 - Irish laborers for England manufacturing
 - Servatude —
 - Franklin own servatude to brother
 - Present Union System (journeyman, etc.)
 - Germans and other immigrants
7. POSTAL SERVICE (COMMUNICATION)
 - Mail transportation with England and Colonies
 - Distribution mail — speed and methods
 - Payment for mail, (no stamps, the receiver paid postage)
 - Postman's buttons
 - Franklin's newspapers — allowed free passage while he was Postmaster General
8. SCIENTIFIC INVESTIGATOR
 - Electricity, Lightning
 - Storm — weather forecasts
 - Gulf Current — Atlantic Ocean, plotting
 - Archeology interest
 - Mastidons jaws
 - Stone Hedge in England
 - Draining Swamps
 - Husbandry
 - Farming
 - Silk worm cultivation
 - Rhubarb and other plants importing and exporting
 - Study astronomy — meteors — purchase of telescope for astronomy
9. PHILANTHROPIST AND FUND RAISER (TO SOCIETY)
 - Books Junto Club
 - Funds for defence — Philadelphia
 - Gifts to cities in will
 - Technique — raising funds and support
10. TRANSPORTATION & TRAVELER PROBLEMS RECORDED IN HIS LETTERS
 - Ships (problems, speed, etc.)
 - Wagon, coachers and horse
 - Balloon — Travels in Colonies — England, Europe
11. ARMED SERVICES
 - General Braddock
 - Organize defense — French, English War
 - Indian warfare
 - John Paul Jones while Franklin was in France
12. CURRENCY
 - Printed first paper currency
 - Franklin's picture $100.00 bill
 - Counterfeit printed money
13. EXPANSION OF THE COUNTRY
 - Ohio Company and other land companies
 - Canada (Peace Treaty) tried to acquire at Paris from English
14. MEDICINE
 - Recommend many prescriptions
 - (Own illness) — gout and pleurisy — reports Indian medicine and many other medicines in letters
15. LEGAL
 - Will — Trusts
16. FOUNDING FATHER
 - Albany suggestions for uniting the colonies
 - Constitution writer with Thomas Jefferson
 - Exchange letters with other Founding Fathers
17. MORALS AND MORIES CHANGES
18. POPULATION ESTIMATES — CENSUS, ETC.
 - Forces that aid population growth
 - This estimate proved to be accurate and disturbing to British Government before the War of Freedom
19. INVENTOR
 - Stove
 - Lightning rods
 - Musical instrument
 - He missed importance of the Steamship invention
20. INSURANCE COMPANIES
 - Fire Insurance
 - Marginalia — anglo — American Controversy
21. FRANKLIN AND THE CHURCHES
22. CIVIC AFFAIRS (Broad coverage of local early and late activities).
23. POLITICIAN

In Memoriam



E. B. JOLLEY, M.D.
1902 - 1975

Born: Mart, Limestone County, Texas, July 30, 1902. Graduate of Baylor University, Baylor, Texas, 1932. He interned at Parkland Hospital, Dallas, Texas, 1930-1934.

He was at Fort Huachuca, Arizona in the Medical Corps and from there he was transferred to the Grand Canyon as Medical Officer in charge of the CCC Camps.

In 1935 he was married to Miss Marion McNeeley and moved to Sinton, Texas and worked there for a year. He had two children by this marriage.

In 1936 he returned to Arizona and went to work for the Phelps Dodge Mining Company in Jerome.

In 1942 he went back into the Army, serving in the States, England and France until 1945. On his return to the States, he went back to Jerome and became Chief Surgeon in 1945 and later was transferred to Bisbee in the same capacity. Dr. Jolley lost his wife the same year.

In 1952 he married Mila Johnson Mitchell. During the time that he was Chief Surgeon the new Copper Queen Hospital was built in Warren in 1961. Jolley retired from the Phelps Dodge Corporation on August 1, 1967.

Dr. Jolley was a member of the following organizations:

Grand High Priest of the Arizona Grand York Rite, Grand Commander of the Grand Commandry of Arizona, Member of the Board of the Arizona State Archeology Society, Bishop's Committee of the St. John Episcopal Church in Bisbee, Common Vestry of the Cochise Regional Ministry, Red Cross Board, Member and Past President of the Bisbee Rotary Club, Member and President of the Cochise County Medical Association, Arizona State Geneology Society.

Suriving are his wife, Mrs. Mila Johnson Jolley, three children and three sisters who are living in Texas.

Joseph Saba, M.D.
Chief Surgeon, Retired

ERRATAM

Dr. Carlos Craig points out a geographical error in *Arizona Medicine*, Vol. 32, #7, p. 579, 1975. It was stated that Pancho Villa made a raid into Columbus, Texas. This outraged Dr. Craig's Texas contingent to such a degree, that we hasten to correct this and state that the correct Columbus is in New Mexico!



Big Balanced Rock, Chiricahua Mountains, Arizona (approx. 1,000 tons)

Found useful in the management of vertigo* associated with iseases affecting the vestibular system.

Can relieve nausea and vomiting often associated with vertigo.*

Usual adult dosage for Antivert/25 for vertigo:* one tablet t.i.d.

Also available as Antivert (meclizine HCl) 12.5 mg. scored ablets, for dosage convenience and flexibility.

Antivert/25 (meclizine HCl) 25 mg. *Chewable* Tablets for ausea, vomiting and dizziness associated with motion sickness.

RIEF SUMMARY OF PRESCRIBING INFORMATION

*INDICATIONS. Based on a review of this drug by the National Academy of Sciences – National Research Council and/or other information, FDA has classified the indications as follows:

Effective: Management of nausea and vomiting and dizziness associated with motion sickness.

Possibly Effective: Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation.

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

The administration of meclizine to pregnant rats during the 12-15 day of gestation has produced cleft palate in the offspring. Limited studies using doses of over 100 mg./kg./day in rabbits and 10 mg./kg./day in pigs and monkeys did not show cleft palate. Congeners of meclizine have caused cleft palate in species other than the rat.

Meclizine HCl is contraindicated in individuals who have shown a previous hypersensitivity to it.

WARNINGS. Since drowsiness may, on occasion, occur with use of this drug, patients should be warned of this possibility and cautioned against driving a car or operating dangerous machinery.

Usage in Children: Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

Usage in Pregnancy: See "Contraindications."

ADVERSE REACTIONS. Drowsiness, dry mouth and, on rare occasions, blurred vision have been reported.

More detailed professional information available on request.

ROERIG Pfizer
A division of Pfizer Pharmaceuticals
New York, New York 10017

Antivert®/25
(meclizine HCl) 25 mg. Tablets
for vertigo*

VISUAL FOCUS ON ACUTE GOUTY ARTHRITIS



Foot of patient with acute gouty arthritis as seen by conventional x-ray.



Scintiphotogram of same foot reflects inflammatory process.

The scintiphotograph on the right shows increased uptake of radiotechnetium polyphosphate in the metatarsophalangeal joint and the proximal interphalangeal joint of the great toe of a patient with acute gouty arthritis. This increased uptake probably results from increased vascularity in the affected areas.

For a more detailed description of scintiphotography, see "addendum" at right.

THERAPEUTIC FOCUS ON

CAPSULES, 25 mg and 50 mg

INDOCIN®

[INDOMETHACIN | MSD]

helps relieve pain and other symptoms of inflammation in acute gouty arthritis in selected patients

INDOCIN is a potent drug with anti-inflammatory, antipyretic, and analgesic properties. It should not be used in conditions other than those recommended. Although INDOCIN does not alter the progressive course of the underlying disease, in selected patients with acute gouty arthritis it has been found highly effective in relieving pain and in reducing fever, swelling, and tenderness.

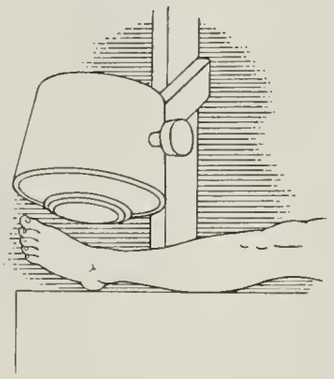
MSD
MERCK SHARP & DOHME

For a brief summary of prescribing information, please see following page.

MSD MERCK SHARP & DOHME

addendum

Facts about Scintiphotography



In recent years a variety of radiopharmaceuticals have been employed to aid in the diagnosis of bone and joint disorders. The joint-imaging technique consists of injecting technetium polyphosphate intravenously, and imaging is performed with the scintillation camera two hours after the administration of the radionuclide. In general, for joint surveying, the shoulders, elbows, hands, wrists, knees, ankles, feet, and vertebral column are mapped. The entire scanning process takes approximately one hour. The criterion for a positive image is a higher concentration of radioactivity in a joint region than in adjacent nonarticular bone. In effect, each patient serves as his own control.

INDOCIN®
(INDOMETHACIN | MSD)



helps relieve pain
and other symptoms
of inflammation
in acute
gouty arthritis
in selected patients

IMPORTANT NOTE: INDOCIN (Indomethacin, MSD) cannot be considered a simple analgesic and should not be used in conditions other than those recommended. The drug should not be prescribed for children because safe conditions for use have not been established.

Because of the high potency of the drug and the variability of its potential to cause adverse reactions, the following are strongly recommended: 1) the lowest possible effective dose for the individual patient should be prescribed. Increased dosage tends to increase adverse effects, particularly in doses over 150-200 mg per day, without corresponding clinical benefits; 2) careful instructions to, and observations of, the individual patient are essential to the prevention of serious and irreversible, including fatal, adverse reactions, especially in the aging patient.

Contraindications: Children 14 years of age and under; pregnant women and nursing mothers; active gastrointestinal lesions or history of recurrent gastrointestinal lesions; allergy to aspirin or indomethacin.

Warnings: *Gastrointestinal Effects:* Because of the occurrence and, at times, severity of gastrointestinal reactions, be continuously alert for any sign or symptom signaling a possible gastrointestinal reaction. The risks of continuing therapy with INDOCIN in the face of such symptoms must be weighed against the possible benefits to the individual patient. Gastrointestinal effects may be reduced by giving the drug immediately after meals, with food, or with antacids. Use greater care in aging patients.

Ocular Effects: Corneal deposits and retinal disturbances, including those of the macula, have been observed in some patients on prolonged therapy. Discontinue therapy if such changes are observed. Ophthalmologic examination at periodic intervals is desirable in patients on prolonged therapy.

Central Nervous System Effects: INDOCIN may aggravate psychiatric disturbances, epilepsy, and parkinsonism, and should be used with considerable caution in patients with these conditions. If severe CNS adverse reactions develop, discontinue the drug.

Precautions: Blurred vision may be a significant symptom that warrants a thorough ophthalmologic examination. Patients should be cautioned about engaging in activities requiring mental alertness and motor coordination, as driving a car. Headache which persists despite dosage reduction requires complete cessation of the drug. May mask the usual signs and symptoms of infection; therefore, the physician must be continually on the alert for this and should use the drug with extra care in the presence of existing controlled infection. After the acute phase of the disease is under control, an attempt to reduce the daily dose should be made repeatedly until the patient is off entirely.

Adverse Reactions: *Gastrointestinal Reactions:* Single or multiple ulcerations of the esophagus, stomach, duodenum, or small intestine, including perforation and hemorrhage, with fatalities in some instances; rarely, intestinal ulceration has been associated with stenosis and obstruction; gastrointestinal bleeding without obvious ulcer formation; perforation of preexisting sigmoid lesions (diverticulum, carcinoma, etc.); rarely, increased abdominal pain in ulcerative colitis patients or development of ulcerative colitis and regional ileitis; gastritis, which may persist after the cessation of the drug; nausea, vomiting, anorexia, epigastric distress, abdominal pain, and diarrhea.

Eye Reactions: Corneal deposits and retinal disturbances, including those of the macula, have been observed on prolonged therapy; blurring of vision.

Hepatic Reactions: Rarely, toxic hepatitis and jaundice, including some fatal cases.

Hematologic Reactions: Aplastic anemia, hemolytic anemia, bone marrow depression, agranulocytosis, leukopenia, and thrombocytopenic purpura. Since some patients manifest anemia secondary to obvious or occult gastrointestinal bleeding, appropriate blood determinations are recommended.

Hypersensitivity Reactions: Acute respiratory distress, including dyspnea and asthma; angiitis; pruritus; urticaria; angioedema; skin rashes; purpura.

Ear Reactions: Hearing disturbances, deafness, tinnitus.

Central Nervous System Reactions: Psychic disturbances including psychotic episodes, depersonalization, depression, and mental confusion; coma; convulsions; peripheral neuropathy; drowsiness; lightheadedness; dizziness; syncope; headache.

Cardiovascular-Renal Reactions: Edema, elevation of blood pressure, hematuria.

Dermatologic Reactions: Loss of hair, erythema nodosum.

Miscellaneous: Rarely, vaginal bleeding, hyperglycemia, glycosuria, ulcerative stomatitis, and epistaxis.

Note: In patients receiving probenecid, plasma levels of indomethacin are likely to be increased.

Supplied: Capsules containing 25 mg indomethacin each, in single-unit packages of 100 and bottles of 100 and 1000; capsules containing 50 mg indomethacin each, in single-unit packages of 100 and bottles of 100.

For more detailed information, consult your MSD representative or see full prescribing information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, Pa. 19486

MSD
MERCK
SHARP &
DOHME

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Mdecial Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, September 27, 1975, a quorum being present, convened at 10:14 a.m., William C. Scott, M.D., President and Chairman presiding.

WELCOME

Dr. Scott extended welcome to the county society presidents and other guests.

MINUTES

The minutes of the meeting held June 28, 1975 were approved as distributed.

ArMPAC

Dr. Langston reported on ArMPAC activities including recent IRS action which resulted in Maricopa County Medical Society no longer including ArMPAC billing along with other dues billing.

Dr. Langston also offered whatever help they can on the matter of malpractice.

He also announced an ArMPAC Workshop for February 14, 1976 and invited all members to attend.

BOARD OF DIRECTORS

ArMA Foundation

NOTE: This section deleted until cleared by legal counsel.

EXECUTIVE COMMITTEE

Classification Changes Approved

Cochise County

(a) C. W. Ahl, M.D.—Active to Associate — Account Retirement — Dues Exempt — Effective 1/1/76.

Maricopa County

(a) Lazarus Manoil, M.D.—Active to Active Over 70 — Account Age — Dues Exempt — Effective 1/1/76.

Refund

It was moved and carried to approve refund of one-half year's dues to Ira Connolly, Jr., M.D. due to illness and leaving state.

Travelers Insurance Companies

Dr. Scott reviewed the actions of the Travelers at the 8/21/75 meeting relating to withdrawing from the malpractice market in Arizona effective 4/1/76. — RECEIVED.

BENEVOLENT AND LOAN COMMITTEE

Dr. Scott announced the recipients of the Association's medical student scholarship as follows:

Carol Gsell — Tempe
Timothy Derksen — Tucson
Michael Sullivan — Tucson
Gerald McNamara — Phoenix
Marilyn Medweid — Phoenix
Charles Morrow — Phoenix
David Osterman — Phoenix
Rebecca Potter — Phoenix

Andrew M. Goldner, Ph.D., Associate Dean of Student Affairs, letter of July 8, 1975 thanking the Association for this much needed program was received. Also received are letters of thanks from Carol Gsell and Rebecca Lynn Potter.

FINANCE COMMITTEE

Statement for period ending August 31, 1975

Dr. Dexter reviewed the subject statement. — RECEIVED.

Malpractice Assessment

Dr. Scott reported the status of the special assessmentas of September 15, 1975 as follows:

County	Total Billed	Total Paid	% of Total Billed	Other Response	Total Accounted For	% of Total Billed
Apache	10	10	100.0	—	10	100.0
Cochise	32	24	75.0	—	24	75.0
Coconino	50	47	94.0	1	48	96.0
Gila	11	8	72.7	—	8	72.7
Graham	9	7	77.8	1	8	88.9
Greenlee	9	8	88.9	—	8	88.9
Maricopa	1230	1117*	90.8	19	1136	92.4
Mohave	23	20	87.0	—	20	87.0
Navajo	6	4	66.7	1	5	83.3
Pima	551	457	82.9	16	473	85.8
Pinal	40	30	75.0	—	30	75.0
Santa Cruz	8	8	100.0	—	8	100.0
Yavapai	40	35	87.5	—	35	87.5
Yuma	47	39	83.0	1	40	85.1
Total	2066	1814	87.8	39	1853	89.7

NET COLLECTED TO DATE $181,350.00

HEALTH MANPOWER COMMITTEE

Medical Students as Guests of Practicing Physicians

IT WAS MOVED AND CARRIED THAT THE ARIZONA MEDICAL ASSOCIATION SPONSOR A PROGRAM WHEREBY UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE STUDENTS AND SPOUSES WOULD BE ENCOURAGED TO BE THE GUESTS FOR TWO OR THREE DAYS IN THE HOMES OF PRIVATE PHYSICIANS IN OUTLYING ARIZONA COMMUNITIES, ON AN ELECTIVE BASIS. IT WOULD BE THE HOST PHYSICIAN'S RESPONSIBILITY TO INTRODUCE THE STUDENT TO COLLEAGUES, COMMUNITY LEADERS, ETC., AND TO ACQUAINT HIM WITH THE MEDICAL FACILITIES AND OPPORTUNITIES AVAILABLE, AND HOPEFULLY TO AID IN ARRANGEMENTS FOR THE STUDENT TO ADDRESS THE LOCAL SENIOR HIGH SCHOOL CLASS ON THE SUBJECT OF MEDICAL CAREER OPPORTUNITIES. IN ADDITION, IT IS RECOMMENDED THAT RURAL PHYSICIANS BE ENCOURAGED TO HOST MEMBERS OF THE MEDICAL SCHOOL FACULTY IN A SIMILAR FASHION ON AN ELECTIVE BASIS.

Clerkship in Family Practice

IT WAS MOVED AND CARRIED THAT THE ARIZONA MEDICAL ASSOCIATION ENCOURAGE THE UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE IN THE FURTHER EXPANSION OF ITS CURRICULUM TO INCLUDE AS A PHASE III ELECTIVE A SIX TO TWELVE WEEK CLERKSHIP IN FAMILY PRACTICE AND COMMUNITY MEDICINE, DESIGNED SO AS TO ENSURE A BENEFICIAL EDUCATIONAL EXPERIENCE FOR THE STUDENT, AND BY MUTUAL CONSENT OF THE STUDENT, THE PRECEPTOR AND THE COLLEGE OF MEDICINE. A COST OF LIVING STIPEND, IF POSSIBLE, WOULD BE MADE AVAILABLE FROM SOURCES OUTSIDE THE COLLEGE OF MEDICINE.

29th National Rural Health Conference

The request that the Association share costs (approximately $1,500.00) of the subject conference was referred to the Finance Committee for action.

Commendation of ArMA/ARMP Program

IT WAS MOVED AND CARRIED TO COMMEND THE ARIZONA REGIONAL MEDICAL PROGRAM FOR THE FINE RESULTS IT HAS ACHIEVED IN THE JOINT ArMA/ARMP PROGRAM TO PLACE PHYSICIANS IN UNDERSERVED AREAS. PARTICULAR COMMENDATION TO GO TO MR. TED McFARLAN.

Arizona Health Service Corp.

Dr. Scott advised that each member has received a synopsis of the subject proposal prepared by the Health Manpower Committee as well as a "Review of Draft of Grant Proposal" relating to this matter. He asked that all members study these documents and be prepared to discuss them at the next meeting of the Board.

Confirmation of new appointments

IT WAS MOVED AND CARRIED TO CONFIRM THE APPOINTMENT OF HERBERT L. WINOGRAD, M.D. TO A THREE-YEAR TERM.

HOUSESTAFF SECTION

Guidelines for Housestaff Contracts

IT WAS MOVED AND CARRIED TO ENDORSE THE "GUIDELINES FOR HOUSESTAFF CONTRACTS OR AGREEMENTS" DEVELOPED BY THE AMERICAN MEDICAL ASSOCIATION AS FOLLOWS

"I. Introduction

The following outline represents an extension of current provisions in the "Essentials of Approved Residencies" (adopted by the House of Delegates in 1970). It is intended to provide guidance to all parties in establishing the conditions under which house officers learn and provide services to patients.

Training programs have been central to the process of graduate medical education, which has produced a high level of medical competence in the United States. The American Medical Association recognizes that the integrity of these programs is a primary objective in achieving the best possible care of the patient. It is, therefore, incumbent upon members of the housestaff and the institutions in which they are being trained to be aware of the parameters and responsibilities applicable to their training programs. In the absence of such awareness, unreasonable expectations may arise to threaten the harmony between hospital and housestaff in the performance of their joint mission.

It should be emphasized that these guidelines are not intended as a fixed formula. Guidelines that seek to cover public, voluntary, and proprietary hospitals necessarily entail so many variables from training institution to training institution that no single form of contract or agreement would be universally applicable. This set of guidelines has, therefore, been developed to cover the more significant substantive provisions of a housestaff contract or agreement.

The subjects included in the Guidelines are not intended to be the only subjects important or appropriate for a contract or agreement. Moreover, the definition of the respective responsibilities, rights, and obligations of the parties involved can assume various forms: individual contracts or agreements, group contracts or agreements, or as a part of the rules of government of the institution.

II. Proposed Terms and Conditions

A. Parties to the Contract or Agreement

1. Contracts or agreements may be formed between individuals or groups, and institutions. Such a group might be a housestaff organization, in which case the representative status of the association on behalf of its members should be expressly accepted and recognized in the contract or agreement.
2. The two parties to an agreement or contract may be a single institution or a group of institutions, and an individual member of the housestaff, an informal group of the housestaff, or a formally constituted group or association of the housestaff, as determined by the housestaff organization.

B. General Principles

1. Contracts or agreements are legal documents and must conform to the laws, rules, and regulations to which the institutions are subject. Position, salary and all other benefits should remain in effect insofar as possible without regard to rotational assignments even when the member of the housestaff is away from the parent institution. Exceptions required by law or regulations should be clearly delineated to the house officer at the time of the appointment. Changes in the number of positions in each year of a training program should be made so as not to affect adversely persons already in, or accepted in, that program.

 The agreement should provide fair and equitable conditions of employment for all those performing the duties of interns, residents, and fellows. When a general contract or agreement is in effect between an associaiton and an institution, individual contracts or agreements should be consistent with it.
2. Adequite prior notification of either party's intent not to renew the contract or agreement should be required, and the date of such notification should be included in the contract or agreement.
3. The institution and the individual members of the housestaff must accept and recognize the right of the housestaff to determine the means by which the housestaff may organize its affairs, and both parties should abide by that determination; provided that the inherent right of a member of the housestaff to contract and negotiate freely with the institution, individually or collectively, for terms and conditions of employment and training should not be denied or infringed. No contract should require or prescribe that members of the housestaff shall or shall not be members of an association or union.

C. Obligation of the Housestaff

1. Members of the housestaff agree to fulfill the educational requirements of the graduate training program, and to use their efforts to provide safe and effective patient care as assigned or required under the circumstances as delineated in the "Essentials of Approved Residencies" and preciously approved standards of the AMA Council on Medical Education.
2. Members of the housestaff should comply with the laws, regulations, and policies to which the institution is subject.

D. Obligation of the Institution

1. The institution agrees to provide an educational program that meets the standards of the AMA "Essentials of Approved Residencies."
2. The institution agrees to maintain continuously its staff and its facilities in compliance with all of the standards in the AMA "Essentials of Approved Residencies."

E. Salary for Housetaff

1. The salary to be paid and the frequency of payment should be specified. The salary schedule should be published. The basis for increments and the time of the increments should be specified.
2. In determining the salary level of a member of the housestaff, prior educational experience should be considered, and a determination made as to whether credit should be given.
3. The responsibilities of senior residents should be recognized in salary differentials.

F. Hours of Work

There should be recognition of the fact that long duty hours extending over an unreasonably long period of time or onerous on-call schedules are not consistent with the primary objective of education or the efficient delivery of optimal patient care. The institution should commit itself to fair scheduling of duty time for all members of the housestaff, including the provision of adequate off-duty hours.

G. Off-Duty Activities

The contract or agreement should provide that a member of the housestaff is free to use his off-duty hours as he sees fit, including engaging in outside employment so long as such activity does not interfere with his obligations to the institution or to the effectiveness of the educational program to which he has been appointed.

H. Vacation and Leave

The amount of vacation, sick leave, and educational leave to which each member of the housestaff is entitled should be specified.

Vacations should be expressed in terms of customary working days as defined by the institution.

If vacations may be taken only at certain times of the year, this restriction should be stated. Any requirements for scheduling vacation time should also be stated.

Provisions may also cover leaves for maternity, paternity, bereavement, military duty, examinations and preparations therefor, and educational conferences. Reimbursements for tuition and expenses incurred at educational conferences should be considered.

The agreement should set forth any progressive increases in the amount of time allowed for vacations, sick leave, and educational leave.

Educational leave should not be deducted from vacation time.

I. Insurance Benefits

Insurance benefits should be set forth with particularity and should be tailored to the specific needs of the housestaff.

Some of the more common insurance benefit provisions are (1) hospitalization and basic medical coverage for the member of the housestaff, spouse, and minor children; (2) major medical coverage for the member of the housestaff, spouse, and minor children; and (3) group life insurance, and dismemberment and disability insurance for the member of the housestaff only.

It should also be specified whether the institution will pay the full amount of premiums or only a portion of the premiums, the balance to be paid by the member of the housestaff. Co-paid benefits should be established separately from other hospital employee benefits, as a means of maximizing benefits.

In some instances, free care for the housestaff and their families at the training institutions may be provided.

In lieu of insurance benefits, the contract or agreement may provide for fixed annual payments to a housestaff association for each member of the housestaff so that the housestaff association may determine and provide for insurance or other benefits for the housestaff.

J. Professional Liability Insurance

The contract or agreement should specify the amount of professional liability insurance that the insurance will provide for each member of the housestaff together with the limits of liability applicable to such coverage.

It might also be appropriate to provide in the contract or agreement that the housestaff and the institution will cooperate fully with the insurance company in the handling of any professional liability claim.

K. Committee Participation

Insofar as possible, the institution should agree to provide for appropriate participation by the housestaff on the various committees within the institution. This participation should be on committees concerning institutional, professional, and administrative matters including grievance and disciplinary proceedings. Members should have full voting rights.

Representatives of the housestaff should be selected by the members of the housestaff.

L. Grievance Procedures

The contract or agreement should require and publish a grievance procedure. A grievance procedure typically involves the following:

1. A definition of the term "grievance" (e.g., any dispute or controversy about the interpretation or application of the contract, any rule or regulation, or any policy or practice).
2. The timing, sequence, and end point of the grievance procedure.
3. The right to legal or other representation.
4. The right of an individual member of the housestaff or a housestaff association to initiate a grievance procedure.
5. A statement of the bases and procedures for the final decision on grievances (end point), and agreement of both parties to abide by the decision.
6. Should costs arise in the grievance procedure, a prior agreement as to how these costs will be apportioned between the parties.

M. Disciplinary Hearings and Procedure

With respect to disciplinary procedures, the provisions of Article VIII — Hearing and Appellate Review Procedure of the JCAH Guidelines for the Formulation of Medical Staff Bylaws, Rules, and Regulations shall be applicable to the housestaff in the same manner as they are to all other members of the medical staff with the proviso that the Hearing and Appeals Committees shall contain appropriate representation of the Housestaff.

N. Description of the Educational Program

The specific details of the operation of the educational experience should be made available to each prospective candidate. These data should include specific descriptions of training programs, including numbers of resident positions at each level of training, copies of exisiting housestaff contracts or agreements, approval status of programs, to which candidate is applying, methods of evaluation, procedures for grievances and disciplinary action, and commitments for further training.

O. Patient-Care Issues

The quality of patient-care services and facilities may be specified in the contract, and could include such matters as adequate equipment, bedspace, clinical staffing, and clinical staff structuring.

P. Other Provisions

The agreement should provide for adequate, comfortable, safe, and sanitary facilities, such as on-call rooms, secure storage areas, security personnel, facilities for bokos, storage of clothing, comfortable sleeping quarters, and limitation of the number of beds per room.

The foregoing provisions are not all-inclusive. Depending upon the institution's size, location and affiliations, if any, and also depending upon the relationship between the institution and the housestaff association, other provisions may be included, such as:

1. Maintenance of existing benefits and practices not otherwise expressly covered;
2. Housing, meals, laundry, uniforms, living-out and telephone allowances;
3. Adequate office space, facilities, and supporting services for housestaff affairs;
4. Housestaff association seminars or meetings."

MATERNAL AND CHILD HEALTH CARE COMMITTEE

Confirmation of Appointments

IT WAS MOVED AND CARRIED TO CONFIRM THE APPOINTMENT OF C. DONALD CHRISTIAN, M.D. AND DAVID PENT, M.D. TO THREE YEAR TERMS ON THE COMMITTEE.

Hospital Bills to Physicians

IT WAS MOVED AND CARRIED THAT THE ARIZONA MEDICAL ASSOCIATION ENCOURAGE ESTABLISHMENT OF A PROCEDURE WHEREBY AN ITEMIZED STATEMENT OF A PATIENT'S HOSPITAL CHARGES WOULD BE SUBMITTED AT THE END OF THE HOSPITAL STAY TO THE ATTEND-

ING PHYSICIAN. IF THERE IS NO PRIVATE PHYSICIAN, THE STATEMENT SHOULD BE SENT TO THE DIRECTOR OF THE MEDICAL SERVICE OR PROGRAM RESPONSIBLE FOR PATIENT CARE.

MEDICAL ECONOMICS COMMITTEE

Resolution 4-75

The subject resolution, quoted below, was referred to the Medical Economics Committee by the House of Delegates on April 26, 1975 with instruction to study the matter and report back to the Board of Directors within six months.

"Resolution 4-75

Subject: SECTION FOR COLLECTIVE BARGAINING AND POLITICAL AND ECONOMIC REPRESENTATION

WHEREAS, National and State governments are becoming controllers of health care practices and costs; and

WHEREAS, The physicians of Arizona and the United States are placed increasingly in the position of being dictated to rather than listened to as regards these policies; and

WHEREAS, Collective action is our only reasonable recourse to governmental direction and restriction; therefore be it

RESOLVED, That the Arizona Medical Association designate or create a section for collective bargaining and political and economic representation; and be it further

RESOLVED, That the Arizona Medical Association approach each member for the legal right to collectively bargain for him; and be it further

RESOLVED, That the Arizona Medical Association's delegates to the American Medical Association House of Delegates introduce a like resolution in that body at their next session."

Following considerable discussion of the committee's recommendation, the following action was taken:

IT WAS MOVED AND CARRIED THAT BECAUSE CURRENT ECONOMIC PRESSURES ARE MAKING THE NEED FOR MORE EFFECTIVE COLLECTIVE BARGAINING ESSENTIAL, AND THAT SOME OF THESE ACTIVITIES COULD BEST BE DONE BY A COLLECTIVE BARGAINING UNIT EXTANT RATHER THAN BY THE ARIZONA MEDICAL ASSOCIATION, THAT THE BOARD OF DIRECTORS CONSIDER WAYS TO IMPROVE LIAISON WITH EXISTING COLLECTIVE BARGAINING UNITS.

Liaison Activities

The matter of a program on medical unionism in the Maricopa area was discussed. Richard W. Switzer, M.D.'s letter of 8/29/75 offering to assist in the development of such a program was noted.

IT WAS MOVED AND CARRIED TO REFER THIS MATTER TO THE MARICOPA COUNTY MEDICAL SOCIETY FOR THEIR CONSIDERATION.

AMA DELEGATION REPORT

Dr. Shapiro reported on the meeting of the delegation and the Executive Committee held earlier in the day in order to improve communications. He also related plans for the Clinical meeting to be held November 30 to December 4.

He also reported that the AMA had changed the by-laws so that each state could determine the terms of their delegates in order to better fit local needs.

IT WAS MOVED AND CARRIED TO REFER THIS MATTER TO THE ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE FOR STUDY AND RECOMMENDATION.

CORRESPONDENCE

PNHA Letter 6/26/75

The subject letter to Governor Castro regarding the College of Medicine was received for information.

Eugene C. Pulliam Memorial Fund

Letters from Tina Pulliam and Jack L. Tinker expressing appreciation for the Association's gift to the subject fund were received.

Coy Z. Foster, M.D. Letter 7/1/75

Dr. Foster's letter expressing appreciation for representing Arizona at the Interns and Residents Business Session at the AMA meeting in Atlantic City was received.

John P. Schaefer Letter 7/8/75

Dr. Schaefer's (President of the University of Arizona) letter thanking us for offering our help in the College of Medicine matter was received.

Kathryn L. Reed Letter 7/9/75

Miss Reed's letter regarding her participation in the student activities at the Atlantic City meeting of the AMA was received. It was noted that Miss Reed had prepared an article for Arizona Medicine about the meeting.

Misty Coumbe Letter 8/20/75

Mrs. Coumbe's letter of thanks for participating on the Adriatic trip was received.

Max Parrott, M.D. Letter 9/8/75

Dr. Parrott's (President of the AMA) letter of 9/8/75 congratulating ArMA on surpassing its membership goals for 1974 was received.

NABSP Investigation

John C. Foster's letter of 9/5/75 to the National Association of Blue Shield Plans requesting an investigation of Arizona Blue Cross and Blue Shield and Ned F. Parish's letter of 9/23/75 indicating that they would set up such an investigation was received for information.

OTHER BUSINESS

Mobil Eye Unit

IT WAS MOVED AND CARRIED TO APPROVE THE MOBIL EYE UNIT PROPOSAL AS SUBMITTED BY THE OPHTHALMOLOGY DIVISION OF THE DEPARTMENT OF SURGERY, COLLEGE OF MEDICINE, UNIVERSITY OF ARIZONA.

Benjamin Rush Memorial Fund

Mr. Robinson reported that as of 9/15/75 we have collected $851.00 toward the subject fund. RECEIVED

Physician's News Bureau Inc.

Merrill S. Chernov, M.D. explained the background and purpose of the subject organization. RECEIVED

Malpractice Insurance Crisis Committee

Dr. Brooks and Mr. Edward Jacobson, legal counsel, gave an extended explanation of the work being done by the subject committee. Many questions were asked and answered.

IT WAS MOVED AND CARRIED TO COMMEND DR. BROOKS AND HIS COMMITTEE FOR THE EXCELLENT WORK DONE TO DATE AND TO

RECONFIRM THE BOARD'S SUPPORT OF HIS ACTIVITIES.

Meeting adjourned 2:42 p.m.

William E. Crisp, M.D.
Secretary

EXECUTIVE COMMITTEE OF THE HOUSESTAFF SECTION

The meeting of the Executive Committee of the Housestaff Section of the Arizona Medical Association, held Saturday, November 8, 1975, at 810 W. Bethany Home Road, Phoenix, convened at 10:15 a.m., Coy Z. Foster, M.D., Chairman, presiding.

BYLAWS

The proposed Bylaws of the Housestaff Section were reviewed in depth. Alex Kelter, M.D. presented a revised draft to the group. Several changes were decided upon. Of primary importance was the decision to revert to proportional representation on the Executive Committee from the various residency programs. The revised draft incorporating changes noted this date is to be circulated to the members of the Executive Committee for their final approval before being presented to the parliamentarian of ArMA for review before being passed to the Board of Directors.

NEWSLETTER

Alan Engelberg, M.D. presented suggested copy for the Newsletter. This was approved and will go out next week.

PNHA COUNCIL MEETING

Alex Kelter, M.D. reported on the meeting of the PNHA Council, to which Dr. Kelter has been elected as the Regional Director for the Southwest. At this meeting PNHA selected a slate of officers to be nominated at the upcoming IRBS meeting in San Francisco.

He reported that there are a number of petitions before the National Labor Relations Board for election of collective bargaining units for housestaff.

HOUSESTAFF WORKSHOP

The Housestaff Workshop held October 4 was reviewed. It is felt it was a great success and most informative for those present. Arizona Medical Center representatives reported that their Housestaff Executive Committee has been working with the local bank to make provisions for issuance of credit cards to incoming house officers to help facilitate their move — this as a result of information gained from the workshop.

Coy Foster, M.D. presented a copy of an organizational manual developed by the Los Angeles County-USC Medical Center Intern and Resident Association. The committee felt this material would be most useful to local housestaff associations, and took the following action.

IT WAS MOVED AND CARRIED THAT A COPY OF THE INTERN AND RESIDENT ASSOCIATION MANUAL BE PUT IN THE HANDS OF EVERY HOSPITAL IN ARIZONA WITH A RESIDENCY PROGRAM.

"MEDICAL OPINION"

The Chairman, Coy Foster, M.D. reported that he had participated recently on a "Medical Opinion" show at the request of ArMA's public relations consultant, and that he was most impressed by the response. He acted as monitor and handled approximately 145 questions from viewers.

He indicated that the public relations people had suggested the possibility of a TV presentation next Spring on the role of housestaff in the health care system.

U OF A COLLEGE OF MEDICINE

The ongoing problem at the university was discussed. The issues concerning housestaff which are involved were outlined by Gordon Tobin, M.D. as follows:

1. Lack of due process at any level, including Department heads, hospital staff, medical staff and housestaff.
2. Lack of the right to free speech by members of an institution in terms of expressing a position on a matter of controversy without threat of dismissal.
3. Lack of safeguards available in peer review mechanisms.
4. Departmental rights in the institution — what are the rights of housestaff or faculty to influence selection of a department head. Does he serve at the pleasure of the Dean and the administration, with exclusive right to hire and fire, or is the Department head a representative of the faculty and should faculty's wishes be considered in selection.
5. There is question that the review two years ago by the Liaison Committee on Graduate Medical Education prior to dismissal of the Head of Surgery may have been unduly influenced by administration.

A letter from Jay K. Harness, M.D., IRBS Chairman, to the AMA Board of Trustees dated 10/14/75 was distributed. In his letter Dr. Harness reported on his recent site visit to the University of Arizona and suggested that the Board of Trustees support the concept of an impartial investigation by an out-of-state committee to be selected by the Arizona Board of Regents.

The Executive Committee agreed to the concept suggested by Dr. Harness, and discussed means of urging this concept locally.

It was decided that letters would be written first to the Pima County Medical Society Board of Mediation asking the status of their investigation.

It was also suggested that a letter be written to the AMA Board of Trustees that they consider appointment of an investigative team as outlined in Dr. Harness' letter.

IT WAS MOVED AND CARRIED THAT THE ABOVE LETTERS BE WRITTEN AS OUTLINED.

DELEGATES TO ARMA HOUSE OF DELEGATES

Letter from ArMA requesting names of delegates and Alternates was read. Alex Kelter, M.D. and H. G. Butler, M.D. are the elected Delegates, with William Ragle, M.D. as Alternate. It was decided to postpone at present the selection of a second Alternate Delegate.

AMA MODEL HOUSESTAFF CONTRACT

IT WAS MOVED AND CARRIED THAT A LETTER BE SENT TO THE ARMA BOARD OF DIRECTORS THANKING THEM FOR ENDORSING THE AMA GUIDELINES TO A MODEL HOUSESTAFF CONTRACT.

ARIZONA MEDICINE

A letter from John W. Kennedy, M.D., Editor of Arizona Medicine was read, in which he invited the

Housestaff Section to submit material for a regular column in the journal.

IT WAS MOVED AND CARRIED THAT ARIZONA HOUSESTAFF AND THE ARIZONA MEDICAL STUDENT ASSOCIATION SHARE A COLUMN IN ARIZONA MEDICINE, ON AN ALTERNATING BASIS.

PARTICIPATION ON ARMA COMMITTEES

A list of ArMA Committees and their functions was distributed. It was pointed out that housestaff participation on any of these committees was welcome.

It was decided that the following names would be submitted to ArMA:

1. Governmental Service Committee — Alan Engelberg, M.D.
2. Legislative Committee — H. G. Butler, M.D.
3. Maternal and Child Health Care Committee — Edward Kilgore, M.D.

A name to be submitted for the Medical Education Committee was to be determined at a later date.

IRBS MEETING IN SAN FRANCISCO

It was announced that names of two new candidates have been entered for IRBS National Offices. H. G. Butler, M.D. will run for Secretary, and Gaylord Nordine, M.D. of Chicago will run for Chairman.

Funds have been made available to Arizona as well as several other locations — namely, Seattle, Chicago and Mayo Clinic — to send eight housestaff from Arizona to the IRBS Meeting November 29. Suggestions for persons to attend this meeting were requested of all housestaff associations. This will be coordinated with staff.

ARIZONA HEALTH SERVICE CORPS PROPOSAL

The draft of the above proposal was introduced for a recommendation by the Housestaff Section. The following action resulted:

IT WAS MOVED AND CARRIED THAT THE ARIZONA HOUSESTAFF SECTION WOULD LIKE TO RECOMMEND APPROVAL OF THE ARIZONA HEALTH SERVICE CORPS PROPOSAL AS A POSITIVE STEP TOWARD SOLUTION OF HEALTH MANPOWER MALDISTRIBUTION PROBLEMS. IT CAN PROVIDE A MEANS BY WHICH ISOLATED COMMUNITIES AND INDIVIDUALS CAN RECEIVE IMPROVED HEALTH CARE THROUGH THE AUSPICES OF THE PRIVATE SECTOR OF MEDICINE AT A STATE LEVEL AS OPPOSED TO FEDERAL GOVERNMENT INTERVENTION.

AMA LEADERSHIP CONFERENCE

The AMA Leadership Conference to be held in January was discussed. It was decided to ask ArMA to approve sending three housestaff to this meeting this year since the group is newly formed and it was felt this would be of particular benefit at this time.

NEXT MEETING

To be considered at the next meeting is the matter of lack of participation of housestaff in their organizations. Means of increasing participation, as well as the aims and objectives of the Arizona Housestaff, will be on the agenda.

Also it is hoped that there will be some resolutions to be discussed for introduction at the ArMA Meeting in April. Letters are to be written to local housestaff groups not presently participating to encourage them to have representatives attend the meetings of the Executive Committee. A letter also is to be written to the Osteopathic Association asking for a representative.

It was also suggested that letters be sent to housestaff who are members of ArMA who have not exhibited an interest thus far in the state housestaff organization.

Next meeting will be held Saturday, January 3, 1976, in Tucson.

Meeting adjourned 2:30 p.m.

Coy Z. Foster, M.D.
Chairman

HEALTH MANPOWER COMMITTEE

The meeting of the Health Manpower Committee of the Arizona Medical Association, held Wednesday, December 10, 1975, at 810 W. Bethany Home Road, Phoenix, convened at 7:15 p.m., Louis C. Kossuth, M.D., Chairman, presiding.

MINUTES

Minutes of the meeting of September 24, 1975 were approved as distributed.

RESIGNATION

Dr. Kossuth read letter from Manus R. Spanier, M.D., resigning from this committee due to time demands of his appointment to the Board of Medical Examiners. Resignation accepted.

PREVIOUS COMMITTEE RECOMMENDATIONS

Dr. Kossuth reported that the University had responded favorably to the recommendation regarding support of preceptorships for medical students, and there is an ongoing program of the University to provide such opportunities. There is a student organization interested in the visitation of medical students to physicians in outlying communities, and Dr. Nichols and his Section are working with the students to develop this program and to compile a list of interested physicians.

PHYSICIAN NEEDS BY SPECIALTY

Dr. Kossuth reported that responses to his letter to Presidents of Specialty societies requesting their estimate of physician-population ratio in their specialties were coming in slowly. He will have a further report on this at a later date.

REGIONAL MEDICAL PROGRAMS PHASE-OUT

A letter from John F. Flynn was read informing of the phase-out of the Regional Medical Programs. In order to continue the work of the RMP, in the areas of medical manpower recruiting, and expansion of services to underserved areas, a non-profit corporation, the Arizona Health Systems Development Corporation, has contracted with Arizona Regional Medical Programs to provide these services. ArMA's continued cooperation is asked.

NED HATATHLI SEMINAR

A request from Lawrence Z. Stern, M.D. for funds to help support the subject health careers seminar for Indian high school students was received. Since the seminar is January 30-31, it was felt that it is too late this year to respond with assistance in soliciting physicians, and the Association traditionally does not make direct financial contributions of this nature. Therefore, the following action was taken.

IT WAS MOVED AND CARRIED THAT NEXT YEAR, IF REQUESTED, ARMA AGREE TO PRO-

VIDE MAILING LABELS FOR SOLICITATION OF PHYSICIAN CONTRIBUTIONS TO THE NED HATATHLI SEMINAR, PROVIDING THE MAILING MATERIALS AND POSTAGE ARE PAID FOR FROM OTHER SOURCES.

HEALTH MANPOWER LINKAGE QUESTIONNAIRE

John W. Seavey, Ph.D., Projector Director of the Health Manpower Linkage Project, an HEW-funded project being conducted at the University of Arizona in conjunction with the Arizona Department of Health Services presented the questionnaire. It is requested that the Arizona Medical Association endorse the questionnaire and print and mail it to the physicians of the State, with the results of the survey to be compiled by the Project personnel. Purpose is to determine numbers of health manpower personnel employed in physicians' offices. HEW provides funds only for the compilation of data, and funds for distribution of questionnaire must be sought elsewhere. The committee discussed the request at length, and took the following action.

IT WAS MOVED AND CARRIED THAT THE HEALTH MANPOWER COMMITTEE RECOMMEND TO THE BOARD OF DIRECTORS THE APPROVAL AND DISTRIBUTION OF THE HEALTH MANPOWER LINKAGE QUESTIONNAIRE, WITH THE PROVISO THAT RESOURCES BE IDENTIFIED FROM SOURCES OTHER THAN THE ARIZONA MEDICAL ASSOCIATION TO FINANCE THIS PROJECT. IT IS ALSO RECOMMENDED THAT THE BOARD OF MEDICAL EXAMINERS BE APPROACHED TO CONSIDER SPONSORSHIP OR CO-SPONSORSHIP OF THE PROJECT.

ARIZONA HEALTH SERVICE CORPS PROPOSAL

Letters pro and con regarding the above proposal were received by the committee from the following persons: Herbert G. Erhart, M.D.; John B. Miller, M.D.; Dermont W. Melick, M.D.; Andrew W. Nichols, M.D.; Frederick J. Brady, M.D.

The draft of the proposal was gone over by the committee page by page, and various changes agreed upon, to be incorporated into the document in a final revision.

The following change in particular was felt to be of importanee and was incorporated on Page 30 of the proposal as a motion of the committee.

IT WAS MOVED AND CARRIED THAT THE FOLLOWING BE SUBSTITUTED FOR PRESENT WORDING IN THE 2ND PARAGRAPH OF PAGE 30:

IT IS ALSO PLANNED THAT BY THE FOURTH YEAR OF OPERATION A BOARD OF DIRECTORS OF THE AHSC MAY BE FORMED AND MAY BECOME A SEPARATE ENTITY, AS DETERMINED BY THE BOARD OF DIRECTORS OF THE ARMA FOUNDATION AND THE ADVISORY COUNCIL. AT THAT TIME THE CORPS, AND NOT THE ARMA FOUNDATION, SHALL ASSUME ADMINISTRATIVE RESPONSIBILITY FOR THE FUNDS, WITH THE ARMA FOUNDATION CONTINUING AS RECIPIENT OF FUNDS FROM FUNDING AGENCIES.

THERE SHALL BE AN EXECUTIVE COMMITTEE APPOINTED BY THE ARMA FOUNDATION TO SUPERVISE ONGOING ACTIVITIES OF THE CORPS.

Upon completion of review and revision of the draft, the following action was taken:

IT WAS MOVED AND CARRIED THAT THE HEALTH MANPOWER COMMITTEE RECOMMEND APPROVAL BY THE BOARD OF DIRECTORS OF THE AHSC PROPOSAL AS SUBMITTED WITH REVISIONS MADE DECEMBER 10, 1975 AND RECOMMEND ITS ADOPTION AND IMPLEMENTATION.

Meeting adjourned at 9:40 p.m.

William E. Crisp, M.D.
Secretary

MEDICAL EDUCATION COMMITTEE

The meeting of the Medical Education Committee of the Arizona Medical Association, held Thursday, December 18, 1975, at 810 W. Bethany Home Road, Phoenix, convened at 7:25 p.m., Robert E. T. Stark, M.D., Chairman, presiding.

SECTION ON ACCREDITATION

William F. Shecley, M.D., Chairman of the Section on Accreditation, reported the actions of his Section concerning acereditation of two hospitals which were recently re-surveyed. The following actions resulted:

IT WAS MOVED AND CARRIED THAT ACCREDITATION OF THE CONTINUING MEDICAL EDUCATION PROGRAM OF THE VETERANS ADMINISTRATION CENTER, PRESCOTT, BE CONTINUED FOR A PERIOD OF FOUR YEARS, WITH A RESURVEY TO BE CONDUCTED AT THAT TIME.

IT WAS MOVED AND CARRIED THAT ACCREDITATION OF THE CONTINUING MEDICAL EDUCATION PROGRAM OF THE MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX, BE CONTINUED FOR A PERIOD OF FOUR YEARS, WITH A RESURVEY TO BE CONDUCTED AT THAT TIME.

The suggestion was made and agreed upon by the members that reports of surveys be circulated to the Medical Education Committee prior to being asked to approve accreditation.

SECTION ON REQUIREMENTS

Albert G. Wagner, M.D., Chairman of the Section on Requirements, reported that his Section had considered the application of the A.R.E. Clinic for approval of a program scheduled for January. The following action was taken by the Section:

IT WAS MOVED AND UNANIMOUSLY CARRIED THAT CATEGORY II CREDIT BE GIVEN FOR THE MEETING ENTITLED "HOLISTIC MEDICINE" SPONSORED BY THE A.R.E. CLINIC ON JANUARY 21-25, 1976, AT THE SAFARI HOTEL, PROVIDED THAT TWO OR THREE MEMBERS OF THE MEDICAL EDUCATION COMMITTEE BE INVITED TO ATTEND THE SEMINAR. IF ANY BROCHURES OR PROGRAMS SHOULD CONTAIN A STATEMENT REGARDING ARMA ACCREDITATION, THE STATEMENT IS TO BE MADE THAT APPROVAL IS FOR CATEGORY II.

The question was raised as to whether the Section on Requirements has the authority to approve programs, whereas the actions of the Section on Accreditation must be reviewed by the parent committee. After discussion, the following action was taken.

IT WAS MOVED AND CARRIED THAT THE SECTION ON REQUIREMENTS CONTINUE AS AT PRESENT TO HAVE THE AUTHORITY TO MAKE DECISIONS ON REQUESTS OF INDIVIDUAL COURSE PRESENTATIONS FOR APPROPRIATE ACCREDITATION BY CATEGORY, BUT THAT AT EACH MEETING OF THE PARENT COMMITTEE, THE SECTION REPORT SUCH ACTIONS AS IT HAS TAKEN AS AN INFORMATION ITEM.

Further action was taken as follows:

IT WAS MOVED AND CARRIED THAT THE MEDICAL EDUCATION COMMITTEE APPROVE THE DECISION MADE BY THE SECTION ON REQUIREMENTS IN THE CASE OF THE A.R.E. CLINIC AS STATED HEREIN ABOVE, BUT MODIFIED TO READ "UP TO TWO MEMBERS" RATHER THAN "TWO OR THREE MEMBERS."

OFFICE OF CONTINUING MEDICAL EDUCATION — U OF A

George D. Comerci, M.D., Associate Dean for Continuing Medical Education at the College of Medicine, reported on activities of his office since he assumed office in July 1975, which included meeting with the Arizona Pediatric Society, planning co-sponsorship with AAFP of a program next Spring, application for institutional accreditation by AMA, with site survey scheduled for late March, and visits to outlying areas to establish educational programs.

PATIENT CARE AUDIT WORKSHOP

Dr. Stark reported to the Committee that following a meeting with the Chiefs of Staff of the majority of hospitals in Arizona. The ArMA Executive Committee in its 9/27/75 meeting determined that ArMA should take leadership in pursuing the assessment and developing a higher degree of peer review activities, starting particularly in the hospitals with the ultimate plan to possibly include peer review in the physicians' offices. The Executive Committee referred "this matter to the Medical Education Committee to develop a program to improve peer review activities."

A preliminary meeting with William C. Scott, M.D., President, Edward Sattenspiel, M.D., President-elect, the Medical Education Committee chairman and the chairmen of the committee's sections, was held November 13, 1975, to discuss various ways and means to accomplish the Executive Committee's objectives. The activities of the California Medical Association's program of accreditation for hospitals and institutions, with its emphasis not only on continuing medical education but also on peer review, were received. The CMA has in the past few years developed a Medical Care Audit Workshop approach which has been found successful in upgrading peer review activities in California hospitals. A recent letter from Dr. C. H. William Ruhe of the AMA's Council on Medical Education, supporting the CMA type workshop, was also received. It was agreed to present a proposal to the full committee revolving mainly on having this kind of workshop conducted in Arizona.

Correspondence with the CMA was initiated. Dr. Samuel Sherman, Chairman of the CMA Accreditation program, suggested instead of conducting a Medical Care Audit Workshop which would be limited to representatives of six hospitals, that a faculty training workshop should be considered. CMA has conducted several of them in the past few months. The obvious benefit would be that Arizona would have its own faculty of physicians, administrators, nurses and medical record librarians trained in the presentation of medical care audit workshops for Arizona institutions.

Dr. Stark reported that a proposal for a workshop to train such a faculty had been received from the CMA. From their proposal a cost estimate sheet had been prepared, which indicated a cost of approximately $11-$12,000 to train 32 Arizona physicians, nurses, hospital administrators and medical records librarians, etc. The figure of 32 total faculty could be reduced to 24, it was pointed out. This would provide for the training of four teams, each capable of conducting a medical care audit workshop, with each team composed of 3 physicians, 1 hospital administrator, 1 nurse and 1 medical records librarian. The faculty training program would be conducted at ArMA headquarters.

The committee felt that this was more than ArMA should spend at this time, especially without knowing more concerning the results obtained in California from the workshops conducted for hospital personnel there. Dr. Stark reminded the committee that they had been charged by the Executive Committee with developing some program of statewide peer review, and that if we could not go ahead with the above plan, the committee should attempt to meet the charge in some other way.

After considerable discussion, the following courses of action were decided upon:

1. That we attempt to obtain names of hospitals in California which have participated in workshops and write to them asking their opinions as to the the benefits they have gained from it.
2. That we send Dr. Stark and possibly one other person to observe a faculty training workshop being conducted for San Bernardino hospitals in Palm Springs in January.
3. That we write to all Arizona hospitals to determine (a) the opinions of the medical staffs and hospital administrations concerning their perceived needs for improved peer review, (b) their interest in participating in a workshop similar to the CMA Medical Care Audit Workshop, (c) their interest in a meeting with Arizona physicians experienced in medical audit for the purpose of exchanging ideas and discussing means for improvement in peer review.

Dr. Stark pointed out that if indeed out of all this the conclusion should be reached that we do not have a problem in Arizona, we need to be able to document the fact for the benefit of the Executive Committee, the Legislature and others who may have raised the question of quality of care and peer review in the State.

NEXT MEETING

The next meeting will be held sometime shortly after Dr. Stark has attended the Palm Springs workshop, and we have received responses from the proposed letters we will write to all Arizona hospitals.

Meeting adjourned 9:25 p.m.

William E. Crisp, M.D.
Secretary
by Misty Coumbe
Associate Executive Director

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEDICAL EDUCATION.

ARIZONA STATE HOSPITAL, PHOENIX
GOOD SAMARITAN HOSPITAL, PHOENIX
PHOENIX INDIAN MEDICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEDICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARD.

THE WINTER DRUG THERAPY SEMINAR ARIZONA STATE HOSPITAL

February 20, 1976
1 to 4 p.m. Personnel & Education Bldg.

SPONSOR: Arizona State Hospital

CONTACT: Eli Schlossberg, R.Ph.
Arizona State Hospital
2500 E. Van Buren St.
Phoenix, AZ 85008

Approved for 3 required hours toward the ArMA Certificate in Continuing Medical Education.

NEWER TECHNIQUES AND MECHANISMS IN THE DETOXIFICATION OF ALCOHOLICS

February 14, 1976
Maricopa County General Hospital

SPONSOR: Maricopa County General Hospital

CONTACT: Director, Medical Education
Maricopa County General Hospital
2601 East Roosevelt
Phoenix, AZ 85008

Approved for 7 required hours toward the ArMA Certificate in Continuing Medical Education.

ARIZONA ACADEMY OF FAMILY PHYSICIANS 23rd ANNUAL SCIENTIFIC ASSEMBLY

February 18-21, 1976
Scottsdale Hilton Hotel, Scottsdale, AZ

SPONSOR: Arizona Academy of Family Physicians

CONTACT: Arizona Academy of Family Physicians
3627 N. 60th Street
Scottsdale, AZ 85251

SOUTHWESTERN SEMINAR ON NEUROMUSCULAR DISEASES

February 13-14, 1976

SPONSOR: U of A College of Medicine
Depts. of Neurology and Pathology

CONTACT:
Lawrence Z. Stern, M.D.
Jack M. Layton, M.D.
College of Medicine
Tucson, AZ 85724

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

INTERNATIONAL CONFERENCE ON INTEGRATED CANCER MANAGEMENT

February 18-21, 1976
Phoenix, AZ, Adams Hotel

SPONSOR: Good Samaritan Hospital, Division of Oncology, American Cancer Society, Arizona Division

CONTACT:
Robert Thoeny, M.D., Prog. Chairman
Director of Radiation Oncology
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education.

TAOS MEDICAL-SKI SYMPOSIUM

February 18-21, 1976
Taos, New Mexico

SPONSOR: Albuquerque Chapter of AAFP

CONTACT:
Dale A. Gray, M.D.
308 Winrock Medical Plaza, N.E.
Albuquerque, New Mexico 87110

PROSTOGLANDINS

February 19, 1976
Flagstaff, AZ

SPONSOR: Coconino County Medical Soc. & Upjohn Pharmaceutical Co.

CONTACT:
Mr. Dan O'Connor, Prog. Dir.
900 N. Cahuenga Blvd.
Los Angeles, CA 90038

Approved for 1 elective hour toward the ArMA Certificate in Continuing Medical Education.

DAY OF RHEUMATOLOGY

March 12, 1976
Camelback Inn, Scottsdale, AZ

SPONSOR: St. Joseph's Hospital & Medical Center

CONTACT:
Ethelann Murray, M.D.
St. Joseph's Hospital & Medical Center
350 W. Thomas Road
Phoenix, AZ 85013

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

PRINCIPLES OF MEDICAL PRACTICE MANAGEMENT FOR THE PRATICING PHYSICIAN

March 12-13, 1975
Hyatt Regency, Phoenix, AZ

SPONSOR: Arizona Medical Association

CONTACT:
Bruce E. Robinson, Executive Director
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

Approved for 14 required hours toward the ArMA Certificate in Continuing Medical Education.

PURGATORY MEDICAL-SKI SYMPOSIUM

Hypertension
March 12-13, 1976

SPONSOR: Albuquerque Chapter of AAFP

CONTACT:
David R. Holten, M.D.
8401 Constitution, N.E.
Albuquerque, New Mexico 87110

RECENT EXPERIENCE WITH A NEW SIMPLIFIED TECHNIQUE FOR PERCUTANEOUS TRANSHEPETIC CHOLANGIOGRAPHY

March 18, 1976
Arizona Medical Association

SPONSOR: Phoenix Society of Gastroenterology

CONTACT: Mrs. Mary Wood
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

GASTROENTEROLOGY FOR CLINICIANS—1976

March 18-20, 1976
Adams Hotel, Phoenix, AZ

SPONSOR: Institute of Gastroenterology
Good Samaritan Hospital

CONTACT:
David C. H. Sun, M.D.
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

CLINICAL RECOGNITION AND MANAGEMENT OF HEART DISEASE — 1976

March 18-20, 1976
Arizona Medical Center

SPONSOR: U of A, College of Medicine
and American College of Physicians

CONTACT: Registrar, Postgraduate Courses
American College of Physicians
4200 Pine Street
Philadelphia, Pa. 19104

Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

UPDATE: PRIMARY CARE — 1976

March 24-27, 1976
Arizona Medical Center

SPONSOR: U of A, College of Medicine

CONTACT: George D. Comerci, M.D.
Associate Dean
Continuing Medical Education
Arizona Medical Center
Tucson, AZ 85724

Approved for 24 required hours toward the ArMA Certificate in Continuing Medical Education.

UPDATE: PRIMARY CARE 1975

March 24-27, 1976
Arizona Medical Center, Tucson, AZ

SPONSOR: U of A College of Medicine
Department of Continuing Medical Education

CONTACT:
George D. Comerci, M.D.
1501 N. Campbell
Tucson, AZ 85724

Approved for 22 required hours toward the ArMA Certificate in Continuing Medical Education.

12th ANNUAL ARIZONA CHEST SYMPOSIUM

April 2-4, 1976
Double Tree Inn, Tucson, AZ

SPONSOR: University of Arizona/THEMP

CONTACT: Lynn M. Taussig, M.D.
Irvin Belzer, M.D.
Dept. of Pediatrics
Arizona Medical Center
Tucson, AZ 85724

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

AN INTERSPECIALTY POSTGRADUATE SEMINAR REGARDING THE SPINE

April 12-14, 1976

SPONSOR: Maricopa County General Hospital

CONTACT: Austin R. Sandrock, M.D.
Dept. of Radiology
Maricopa County General Hospital
2601 E. Roosevelt
Phoenix, AZ 85008

Approved for 15 required hours toward the ArMA Certificate in Continuing Medical Education.

CLINICAL RECOGNITION AND MANAGEMENT OF HEART DISEASE 1976

April 18-20, 1976
University Hospital Auditorium, Tucson, AZ

SPONSOR: U of A College of Medicine

CONTACT: Frank I. Marcus, M.D.
Gordon A. Ewy, M.D.
Arizona Medical Center
Tucson, AZ 85724

Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wednesday, September - May
4:00 p.m. to 5:30 p.m.
Arizona Medical Center, Tucson, AZ, Rm. 8403

SPONSOR: Department of Psychiatry, U of A College of Medicine

CONTACT:
Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ per session toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital, Trek Room, Tucson, AZ

SPONSOR: Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice.

CONTACT:
Richard Silver, M.D., Dir.
Medical Education
Century Medical Plaza, Ste. 106
1701 West St. Mary's Road
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

PHYSICIAN TRAINING PROGRAM

October 1, 1975 - June 30, 1976
Tucson Medical Center, Tucson, AZ

SPONSOR: Arthritis Services Program

CONTACT:
Beth Ziebell, Prog. Dir.
3813 E. 2nd St.
Tucson, AZ 85716

Approved for 30 required hours toward the ArMA Certificate in Continuing Medical Education.

STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p.m.
Arizona State Hospital, Phoenix, AZ

SPONSOR: Arizona State Hospital

CONTACT:
Howard E. Wulsin, M.D.
Arizona State Hospital
2500 E. Van Buren
Phoenix, AZ 85008

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month
Plaza International, Tucson, AZ

SPONSOR: U of A Medical Center, Dept. of Radiology

CONTACT: Irwin M. Freundlich, M.D.
Arizona Medical Center
Dept. of Radiology
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuiing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURGICAL GRAND ROUNDS
4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave.
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St. Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

Directory

THE ARIZONA MEDICAL ASSOCIATION, INC., ORGANIZED 1892, 810 W. BETHANY HOME ROAD, PHOENIX, ARIZONA 85013.

OFFICERS AND DIRECTORS — 1975-76

President—William G. Scott, M.D. U. of A., Dept. of OB-GYN, Tucson 85724
President-Elect—Edward Sattenspiel, M.D. 333 W. Thomas Rd., Phoenix 85013
Vice President—John F. Kahle, M.D. 715 N. Beaver, Flagstaff 86001
Secretary—William F. Crisp, M.D. 926 E. McDowell Rd., Phoenix 85006
Treasurer—Richard L. Dexter, M.D. P. O. Box 26926, Tucson 85726
Past President—William G. Payne, M.D. P. O. Box V, Tempe 85281
Editor-In—Chief—John W. Kennedy, M.D. 705 E. Tuckey Ln., Phoenix 85014
Delegate to AMA—Seymour I. Shapiro, M.D. 5402 E. Grant Rd., No. F, Tucson 85712
Delegate to AMA—Richard O. Flynn, M.D. 2210 S. Mill Ave., Tempe 85281
Delegate to AMA—W. Scott Chisholm, Jr., M.D. 1158 E. Missouri Ave., Phoenix 85014
Alt. Delegate to AMA—Arthur V. Dudley, Jr., M.D. 1601 N. Tucson Blvd., Tucson 85716
Alt. Delegate to AMA—John J. Standifer, M.D. 412 E. Oak St., Kingman 86401
Alt. Delegate to AMA—Patrick P. Moraca, M.D. 217 E. Virginia, Phoenix 85004
AMA Trustee—Daniel T. Cloud, M.D. 3411 N. 5th Ave., Phoenix 85013

DISTRICT DIRECTORS

Central District—Reginald J. M. Zeluff, M.D. 217 E. Virginia, Phoenix 85004
Central District—George L. Hoffmann, M.D. 138 W. 5th Place, Mesa 85201
Central District—James M. Hurley, M.D. 3143 N. 32nd St., Phoenix 85018
Central District—Wallace A. Reed, M.D. 1040 E. McDowell Rd., Phoenix 85006
Central District—Lawrence J. Shapiro, M.D. 550 W. Thomas Rd., Phoenix 85013
Northeastern District—Jack I. Mowrey, M.D. P. O. Box 887, Lakeside 85929
Northwestern District—Richard T. McDonald, M.D. 713 N. Beaver, Flagstaff 86001
Southeastern District—Edward R. Curtis, M.D. 503 5th Ave., Safford 85546
Southern District—Richard S. Armstrong, M.D. P. O. Box 12787, Tucson 85732
Southern District—Henry P. Limbacher, M.D. 2205 E. Hampton, Tucson 85719
Southern District—Vernon E. Lovett, M.D. 5402 E. Grant Rd., Tucson 85712
Southwestern District—Glen H. Walker, M.D. 291 W. Wilson, Coolidge 85228

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

President—Fernando de la Cueva, M.D. Pavo-135-306, Guadalajara, Jal. Mexico
President-Elect—Thomas H. Taber, Jr., M.D. 333 E. Virginia, Suite #212, Phoenix, AZ 85012
Vice-President—Pedro Gortazar Hijar, M.D. Guadalajara, Jal. Mexico
Secretary-USA—Schuyler V. Hilts, M.D. Tucson Medical Center, P.O. Box 6607, Tucson, AZ 85716
Secretary-Mexico—Felix Torres Herrera, M.D. Guadalajara, Jal. Mexico
Treasurer-USA—Lucy A. Vernetti, M.D. 333 W. Thomas Rd., Ste. 207, Phoenix, AZ 85013
Treasurer-Mexico—Franco Leopoldo C. Guadalajara, Jal. Mexico
Executive Secy.—USA—Mrs. Virginia E. Bryant 333 W. Thomas Rd., Ste. 207, Phoenix, AZ 85013
Executive Secy.—Mexico—Dr. Alfredo Patron Mazatlan, Sinoala, Mexico

COMMITTEES — 1975-76

ARTICLES OF INCORPORATION & BYLAWS: Charles E. Henderson, M.D., Chairman (Phoenix); Philip F. Dew, M.D., (Tucson); Arnold H. Dysterheft, M.D. (Lakeside); Paul B. Jarrett, M.D., (Phoenix); Clarence E. Yount, Jr., M.D.

BENEVOLENT AND LOAN FUND: Arthur V. Dudley, M.D., Chairman, (Tucson); George Adams, M.D., (Tucson); Richard L. Dexter, M.D. (Tucson); R. Lee Foster, M.D. (Phoenix); Edward J. Lefeber, M.D. (Mesa); Cecil C. Vaughn, Jr., M.D. (Phoenix); Carl F. Voldeng, M.D. (Phoenix).

FINANCE: Richard L. Dexter, M.D., Chairman (Tucson); William J. Dunn, M.D. (Phoenix); Herbert C. Erhart, Jr., M.D. (Springerville); James L. Grobe, M.D., (Phoenix); Charles C. Hedges, Jr., M.D. (Phoenix); Gerald Marshall, M.D. (Phoenix); Robert P. Purpura, M.D., (Tucson); Otto S. Shill, Jr., M.D. (Tempe); Seymour I. Shapiro, M.D. (Tucson); George Wallace, M.D. (Scottsdale).

GOVERNMENTAL SERVICES: Arthur D. Nelson, M.D., Chairman, (Scottsdale); John A. Ash, M.D., (Phoenix); Otto L. Bendheim, M.D., (Phoenix); Suzanne E. Dandov, M.D., (Phoenix); Donn G. Duncan, M.D., (Tucson); Walter R. Eicher, M.D. (Chandler); Lloyd S. Epstein, M.D., (Tucson); John W. Hearon, M.D., (Phoenix); Charles Kahl, M.D. (Phoenix); Frank V. Keary, M.D., (Tucson); Louis C. Kossuth, M.D. (Phoenix), Joseph J. Likos, M.D. (Phoenix); Joseph L. Marcarelli, M.D., (Sun City); Dermont W. Melick, M.D., (Tucson); O. Melvin Phillips, M.D., (Scottsdale); Wallace A. Reed, M.D. (Phoenix); Helen M. Roberts, M.D. (Phoenix); Marvin C. Schneider, M.D., (Phoenix).

HEALTH MANPOWER: Louis C. Kossuth, M.D., Chairman (Phoenix); Casey D. Blitt, M.D., (Tucson); Bruce N. Curtis, M.D., (Safford); Alexander Kelter, M.D., (Tucson); Edward J. Lefeber, Jr., M.D. (Mesa); Roger A. Lueck, M.D., (Phoenix); Dermont W. Melick, M.D., (Tucson); John B. Miller, M.D., (Phoenix); Andrew W. Nichols, M.D., (Tucson); Robert St. John, M.D., (Phoenix); Manns R. Spanter, M.D. (Prescott); H. Stephens Thomas, M.D., (Phoenix); Jesse W. Tapp, Jr. M.D., (Tucson); Herbert L. Winograd, M.D., (Phoenix).

HISTORY & OBITUARIES: John W. Kennedy, M.D., Chairman (Phoenix); Francis J. Bean, M.D. (Tucson); Walter Brazie, M.D., (Kingman); C. Bland Giddings, M.D., (Mesa); John R. Green, M.D., (Phoenix); Abe I. Podolsky, M.D. (Yuma); Jay L. Sitterley, M.D., (Flagstaff).

LEGISLATIVE: Edward Sattenspiel, M.D., Chairman, (Phoenix); Richard W. Ahlbuhl, M.D., (Phoenix); James E. Campbell, M.D., (Phoenix); John S. Carlson, M.D., (Phoenix); W. Scott Chisholm, Jr., M.C. (Phoenix); Sam C. Colachis, Jr., M.D. (Phoenix); Richard L. Collins, M.D., (Scottsdale) Donald F. Griess, M.D., (Tucson); Louis Hirsch, M.D., (Tucson); Robert D. Hedgell, M.D., (Prescott); John P. Holbrook, M.D., (Tucson); Gerald Marshall, M.D., (Phoenix); Richard McGill, D.O., (Phoenix); Gerald F. McNally, M.D., (Prescott); Donald R. Miles, M.D., (Phoenix); R. Michael O'Hara, M.D., (Phoenix); Robert J. Oliver, III, M.D., (Tucson); Ratibor Patovich, M.D., (Phoenix); O. Melvin Phillips, M.D., (Scottsdale); Wilfred M. Porter, M.D., (Scottsdale); Paul L. Schnur, M.D., (Tucson); Berton Siegel, D.O., (Phoenix); John Vosskuhler, M.D., (Flagstaff); Dennis Weiland, M.D., (Scottsdale).

MATERNAL & CHILD HEALTH CARE: Raymond J. Jennett, M.D., Chairman (Phoenix); Frederic W. Baum, M.D. (Tempe); Walter B. Cherny M.D., (Phoenix); C. Donald Christian, M.D. (Tucson); Warren A. Colton, Jr., M.D., (Tempe); William J. R. Daily, M.D., (Phoenix); Jack H. Demlow, M.D., (Tucson); Glenn M. Friedman, M.D. (Scottsdale); Harlan R. Giles, M.D., (Tucson); Walter K. Kippard III, M.D. (Phoenix); Belton P. Meyer, M.D., (Phoenix); William J. Moore, M.D., (Phoenix); William G. Payne, M.D., (Tempe); David Peni, M.D., (Phoenix); Hermann S. Rhu, Jr., M.D., (tucson); Paul W. Whitmore, D.O., (Phoenix).

MEDICAL ECONOMICS: Robert P. Purpura, M.D., Chairman (Tucson); Richard S. Armstrong, M.D., (Tucson); Albert C. Asendorf, M.D., (Phoenix); Chester G. Bennett, M.D., (Phoenix); Avi Ben-Ora, M.D., (Scottsdale); Charles M. Bergschneider, M.D., (Scottsdale); Arthur M. Brandt, M.D., (Tucson); Sam C. Colachis, Jr., M.D. (Phoenix); Charles F. Dalton, M.D., (Phoenix); George L. Hoffmann, M.D., (Mesa); Frederick W. Jensen, Jr., M.D., (Phoenix); John F. Kahle, M.D., (Flagstaff); Howard N. Kandell, M.D., (Phoenix); Patrick P. Moraca, M.D., (Phoenix); Paul L. Schnur, M.D., (Tucson); George Serhin, M.D., (Phoenix); Richard W. Switzer, M.D., (Tucson); Burton E. Weissman, M.D., (Phoenix); Reginald J. M. Zeluff, M.D., (Phoenix).

MEDICAL EDUCATION: Robert E. T. Stark, M.D., Chairman (Phoenix); James E. Brady, Jr., M.D., (Tucson); Daniel B. Carroll, M.D., (Phoenix); Melvin L. Cohen, M.D., (Phoenix); George D. Comerci, M.D., (Tucson); David J. Crosby, M.D., (Phoenix); Kenneth A. Diegseth, M.D., (Sierra Vista); Francis T. Flood, M.D., (Phoenix); Harry W. Hale, Jr., M.D. (Phoenix); Robert E. Hastings, Jr., M.D., (Tucson); M. Wayne Heine, M.D., (Tucson); Raymond J. Jennett, M.D. (Phoenix); Howard N. Kandell, M.D., (Phoenix); Jack M. Layton, M.D., (Tucson); Lawrence R. Mansur, M.D., (Safford); William F. Sheely, M.D., (Phoenix); Lawrence Z. Stern, M.D., (Tucson); Jesse W. Tapp, Jr., M.D., (Tucson); Aston B. Taylor, M.D., (Phoenix); Albert G. Wagner, M.D. (Phoenix).

OCCUPATIONAL HEALTH: Joseph M. Hughes, M.D., Chairman, (Phoenix); Floyd K. Berk, M.D., (Tucson); Richard Besserman, M.D., (Phoenix); Earl M. Best, M.D., (Phoenix); Sheldon Davidson, M.D., (Phoenix); Walter V. Edwards, M.D., (Phoenix); Robert V. Horan, M.D., (Morenci); Robert B. Leonard, M.D., (Phoenix); Florian R. Rahe, M.D. (Scottsdale); Eugene J. Ryan, M.D. (Phoenix); William C. Trier, M.D. (Tucson); Maier Tuchler, M.D. (Phoenix); Willis A. Warner, M.D., (Phoenix).

PHYSICIAN REHABILITATION: Richard E. H. Duisberg, M.D., Chairman (Phoenix); John Bartness, M.D., (Phoenix); Otto L. Bendheim, M.D., (Phoenix); William E. Bishop, M.D., (Globe); John T. Clymer, M.D., (Tucson); Donald L. Damstra, M.D. (Phoenix); Bernard M. Kuhr, M.D., (Tucson); Lawrence M. Linknet, M.D., (Phoenix); Walter B. Tomlinson, M.D. (Elgin); Karl E. Voldeng, M.D., (Phoenix); Eleanor A. Waskow, M.D. (Phoenix).

MEMBERS ARE URGED TO BRING MATTERS ON INTEREST AND CONCERN TO THE CHAIRMEN OF THE APPROPRIATE COMMITTEE OR TO THE ATTENTION OF ANY MEMBER OF THE BOARD OF DIRECTORS.

AN INVOLVED MEMBERSHIP IS THE BASIS FOR AN EFFECTIVE ASSOCIATION.

PROFESSIONAL: Robert S. Ganelin, M.D., Chairman, (Phoenix); Paul M. Bindelgas, M.D., (Phoenix); Paul B. Borgeson, M.D., (Phoenix); John A. Bruner, M.D., (Phoenix); L. Philip Carter, M.D., (Phoenix); James L. Grobe, M.D. (Phoenix); Joseph W. Hanss, Jr., M.D., (Phoenix); James M. Hurley, M.D., (Phoenix); Helen Johnson, M.D., (Tucson); Laurence M. Lankner, M.D., (Phoenix); William G. Payne, M.D., (Tempe); Edward Sattenspiel, M.D., (Phoenix); Donald F. Schaller, M.D., (Phoenix); George A. Spendlove, M.D., (Phoenix); Neil O. Ward, M.D., (Phoenix).

PUBLIC RELATIONS: Selma F. Targovnik, M.D., Chairperson (Phoenix); W. David Ben-Asher, M.D., (Tucson); F. Fredrick Bloemker, M.D., (Phoenix); J. Walter Brock, M.D., (Scottsdale); Ronald L. Christ, M.D., (Yuma); Jultan DeVries, (Phoenix); Edward B. Grothaus, M.D., (Sierra Vista); Robert A. Johnson, M.D., (Phoenix); Robert F. Kelling, Sr., M.D., (Ajo); Irving M. Pallin, M.D., (Sun City); William Russell, Jr., M.D., (Phoenix); Morton S. Thomas III, M.D., (Wickenburg).

PUBLISHING: John W. Kennedy, M.D., Chairman, (Phoenix); Walter V. Edwards, M.D., (Phoenix); Gerald Kaplan, M.D., (Phoenix); George Lasznick, M.D., (Sun City); William B. McGrath, M.D., (Phoenix); David Pent, M.D., (Phoenix); Michael M. Schreiber, M.D., (Tucson); David C. H. Sun, M.D. (Phoenix).

SCIENTIFIC ASSEMBLY: Milton S. Dworin, M.D., Chairman, (Tucson); Merrill M. Abeshaus, M.D., (Flagstaff); Suresh C. Anand, M.D. (Phoenix); Floyd K. Berk, M.D., (Tucson); Thomas E. Bittker, M.D., (Phoenix); W. Scott Chisholm, M.D., (Phoenix); Vicent A. Fulginiti, M.D., (Tucson); Otto Gamhacorta, M.D., (Tucson); Jerome Gerendasy, M.D., (Mesa); Laurence M. Haas, M.D., (Tucson); Timothy R. Harrington, M.D., (Phoenix); Clifford J. Harris, Jr., M.D., (Mesa); Thomas F. Hartley, M.D., (Phoenix); Wayne H. Heine, M.D., (Tucson); Thomas S. Henry, M.D., (Flagstaff); James M. Hurley, M.D., (Phoenix); Mark M. Kartchner, M.D., (Tucson); Norman N. Komar, M.D., (Tucson); Eugene Leibsohn, M.D., (Phoenix); Philip Levy, M.D., (Phoenix); William S. Nevin, M.D., (Tucson); Neopito L. Robles, M.D., (Tucson); Richard A. Silver, M.D., (Tucson); Donald P. Speer, M.D., (Tucson); Louis S. San, M.D., (Phoenix); Wilbur C. Voss, M.D., (Tucson); Donald J. Ztehm, M.D., (Phoenix).

COUNTY MEDICAL SOCIETY OFFICERS, 1976-77

APACHE: Robert D. Martin, M.D., President, Prof. Plaza Bldg., Pinetop, 85935; Johannes J. Heynekamp, M.D., Secy., White Mountain Community Hospital, Springerville, 85938.

COCHISE: Joroge Gaytan, M.D., President, 640 Kent St., Douglas, 85607; Robert H. Page, M.D., Secy., 640 Kent St., Douglas, 85607.

COCONINO: Joseph R. Reno, M.D., President, Box 310, Flagstaff, C. Herbert Fredell, M.D., Secy., 120 Fine St., Flagstaff, 86001.

GILA: B. J. Collopy, M.D., President, Miami Inspiration Clinic, 85539; David B. Gilbert, M.D., Secy., Box 1030, Payson, 85541.

GRAHAM: Laurence R. Mansur, M.D., President, 2016 W. 16th St., Safford, 85546.

GREENLEE: Robert V. Horan, M.D., President, Morenci Hospital, Morenci, 85540; Lyle H. Boyea, M.D., Secy., Morenci Hospital, Morenci, 85540.

MARICOPA: William R. Meyers, M.D., President; Max L. Wertz, M.D., Secy. (Society address: 2025 N. Central Ave., Phoenix, 85004).

MOHAVE: Earl S. Gilbert, M.D., President, Mohave General Hospital, Kingman, 86401; Irving S. Young, M.D., Mohave General Hospital, Kingman, 86401.

NAVAJO: Robert J. Haley, III, M.D., President, P.O. Box 700, Holbrook, 86025; Harry Beckwith, M.D., Secy., East 2nd & Colorado Ave., Winslow, 86047.

PIMA: M. David Ben-Asher, M.D., President; Stuart W. Westfall, M.D., Secy., (Society address): 2555 E. Adams St., Tucson, 85716).

PINAL: Howard Hyde, M.D., President, 1023 E. Florence, Casa Grande, 85222; Hugh A. Richmond, M.D., Secy., 900 E. Florence Blvd., Casa Grande, 85222.

SANTA CRUZ: Enrique Suarz, M.D., President, 711 Morley Ave., Nogales, 85621; Charles S. Smith, M.D., Secy., Box 1382, Nogales, 85621.

YAVAPAI: David C. Duncan, M.D., President, 801 Miller Valley Rd., Prescott, 86301; Ronald Gardner, M.D., Secy., 1000 Willow Creek Rd., Prescott, 86301.

YUMA: William Hultgen, M.D., President, 423 W. 8th St., Yuma, 85364; J. Frank Martin, M.D., Secy., 1150 W. 24th St., Yuma, 85364.

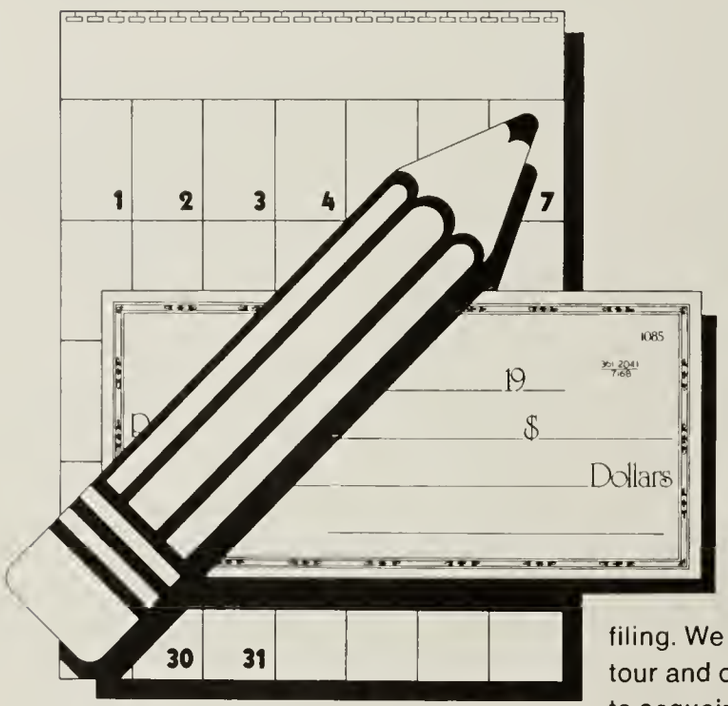
WOMAN'S AUXILIARY TO THE ARIZONA MEDICAL ASSOCIATION 1975-76

PRESIDENT Mrs. Howard W. Kimball (Ella)
414 W. Northview, Phoenix 85021
PRESIDENT-ELECT Mrs. George I. Hoffmann (Julie)
540 Mesa Vista Lane, Mesa 85203
1ST VICE PRESIDENT Mrs. Joseph Reno (Maude)
621 W. Beal Rd., Flagstaff 86001
2ND VICE PRESIDENT Mrs. Arnold Hollander (Carol)
75745 Sabino Vista Dr., Tucson 85715
RECORDING SECY Mrs. Albert Asendorf (Donna)
502 E. Claremont St., Phoenix 85012
TREASURER Mrs. Thurman Leonard (Ann)
2261 E. Glenn, Tucson 85719
DIRECTOR 1974-76 Mrs. Robert Delph (Grace)
600 Robin Lane, No. 21, Yuma 85364
DIRECTOR 1975-76 Mrs. Raymond Vaaler (Ann)
3621 N. 54th Court, Phoenix 85018
DIRECTOR 1975-77 Mrs. Albert Wagner (Helen)
3216 E. Meadowbrook, Phoenix 85018
CHAPLAIN Mrs. Sam M. Mackoff (Selma)
5343 N. 23rd St. Phoenix, 85016
CORRESP. SECY. Mrs. Charles Kahl (Ylma)
1300 E. Missouri, Phoenix 85014
HISTORIAN Mrs. Melvin Phillips (Jean)
1001 Norris Rd., Prescott 86301
PARLIAMENTARIAN Mrs. Lewis S. Winter (Jean)
1714 E. Rose Lane, Phoenix 85016

STANDING AND SPECIAL COMMITTEES

AMA-ERF Mrs. Earl Gilbert (Vicki)
3010 Van Martier Court, Kingman 86401
BYLAWS, PROCEDURES, GUIDELINES Mrs. Paul Jarrett (Beverley)
501 E. Pasadena, Phoenix, 85012
COMMUNICATIONS Mrs. Lynn Newman (Joyce)
4531 W. Seldon Lane, Glendale 85302
COMMUNITY HEALTH Mrs. Gordon Tekell (Pat)
1391 Gateway Ave., Yuma 85364
CONVENTION Mrs. Ronald Johnson (Terry)
532 W. Northview, Phoenix 85021
FAMILY HEALTH Mrs. Edward Bryne-Quin (Ruth)
7081 E. Opatas Place, Tucson 85715
FINANCE Mrs. John Hayes (Shirley)
717 W. El Camino, Phoenix 85021
GEMS Mrs. Ronald Kolker (Ruth)
6211 Camino Almonte, Tucson 85718
HAMER EDUCATION LOAN FUND Mrs. William Biship (Marion)
211 W. 3rd, Globe 85501
HEALTH EDUCATION Mrs. Charles C. Hedges, Jr., (Dottie)
5227 E. Fresno Dr., Phoenix 85018
HEALTH MANPOWER Mrs. Luis Tan (Mary Jo)
3510 E. Nita Rd., Paradise Valley 85253
HOSTESS Mrs. Rex Vaubel
117 W. Glenn Dr., Phoenix 85021
INTERNATIONAL HEALTH Mrs. J. O. Soderstrom (Juanita)
805 Prescott Heights Dr., Prescott 86301
LEGISLATION Mrs. John A. Ash (Agnes)
5818 N. 3rd Ave., Phoenix 85013
MEMBERSHIP Mrs. Joseph Reno (Maude)
621 W. Beal Rd., Flagstaff 86001
PROGRAM Mrs. Arnod Hollander (Carol)
7545 Sabino Vista Dr., Tucson 85715

Speed up our payments to you.



WHENEVER CLAIMS AREN'T SUBMITTED PROMPTLY AND CORRECTLY BY YOUR STAFF, DELAYS IN PAYMENT CAN BE CONSIDERABLE.

Help yourself. Ensure your bookkeeping system is geared to prompt and accurate claims filing. We invite your staff to schedule a tour and open house at our office to acquaint them with our claims forms and procedures. And any time they have a question or suggestion, encourage them to call your Blue Shield professional relations representative.

Through active cooperation we can strengthen the good things that make us the leader.

Blue Shield®
of Arizona

®Registered Service Mark of the National Association of Blue Shield Plans

"Kid, this stuff is the bananas."



Experts agree: when it comes to good-tasting banana flavor—without the unpleasant taste of paregoric—the makers of Donnagel®-PG really know their stuff!

For diarrhea

Donnagel®-PG Ⓥ

Donnagel with paregoric equivalent

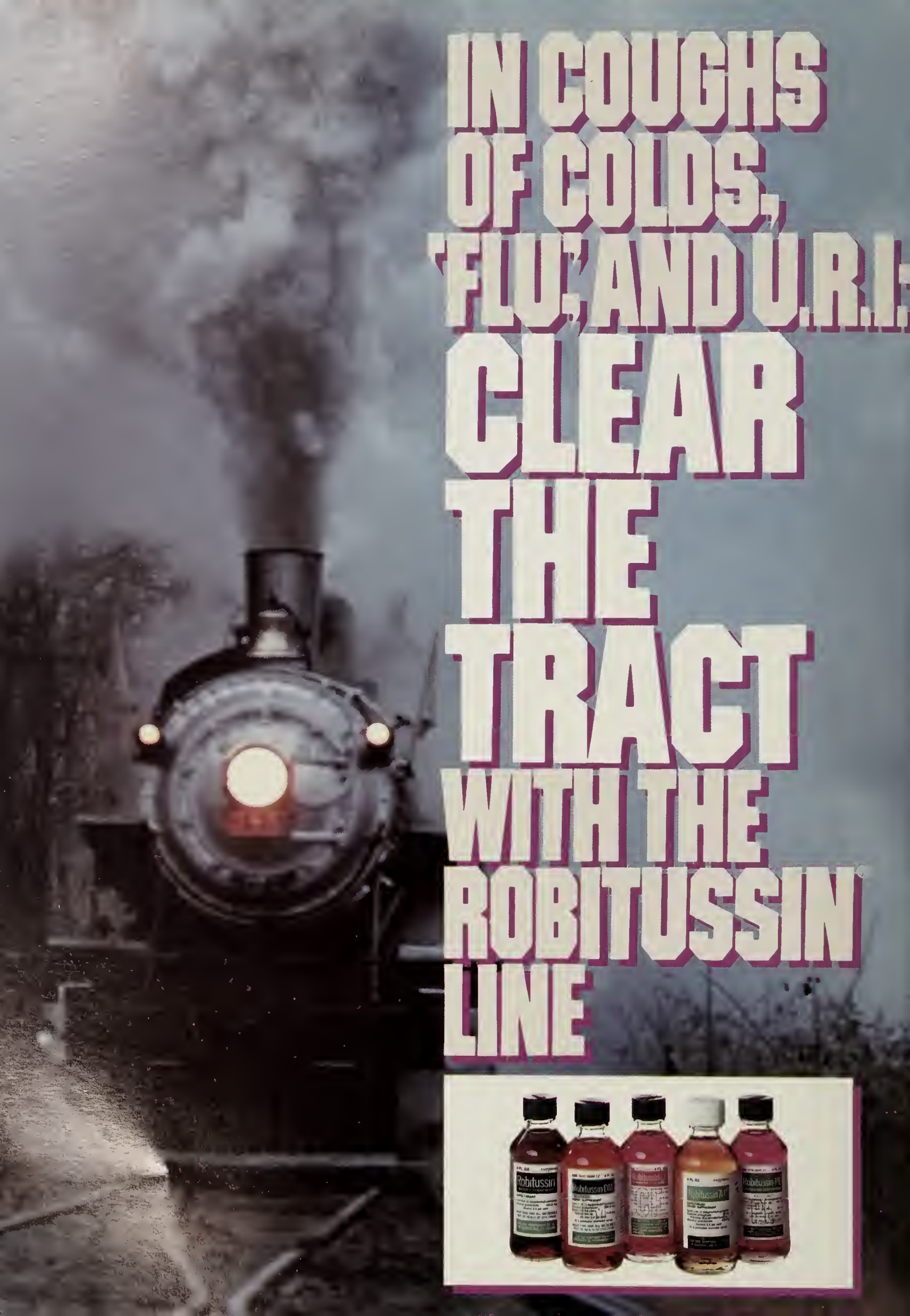
Each 30 cc. contains:	
Kaolin	6.0 g.
Pectin	142.8 mg.
Hyoscyamine sulfate	0.1037 mg.
Atropine sulfate	0.0194 mg.
Hyoscine hydrobromide	0.0065 mg.
Powdered opium, USP (equivalent to paregoric 6 ml.) (warning: may be habit forming)	24.0 mg.
Sodium benzoate (preservative)	60.0 mg.

Alcohol, 5%

Now with child-proof closure

A·H·ROBINS

A. H. Robins Company
Richmond, Virginia 23220


IN COUGHS
OF COLDS,
'FLU, AND U.R.I.
CLEAR
THE
TRACT
WITH THE
ROBITUSSIN
LINE
Robitussin
Robitussin-DM
Robitussin A-C
Robitussin-PE

HE 5 **RELIABLE ROBITUSSINS** can really help clear the respiratory tract. All contain guaifenesin,* the expectorant that works systemically to help stimulate the output of lower respiratory tract fluid. his enhanced flow of less viscid secretions promotes ciliary action and nakes thick, inspissated mucus less viscid and easier to raise.

ormerly named Glyceryl Guaiacolate

For productive and unproductive coughs

ROBITUSSIN®

Each 5 ml teaspoonful contains:
Guaifenesin, NF. 100 mg
Alcohol, 3.5%

For severe coughs

ROBITUSSIN A-C® Ⓥ

Each 5 ml teaspoonful contains:
Guaifenesin, NF. 100 mg
Codeine Phosphate, USP. 10.0 mg
(warning: may be habit forming)
Alcohol, 3.5%

Non narcotic for 6-8-hr. cough control

ROBITUSSIN-DM®

Each 5 ml teaspoonful contains:
Guaifenesin, NF. 100 mg
Dextromethorphan Hydrobromide, NF. 15 mg
Alcohol, 1.4%

Decongests nasal passages and sinus openings as it helps relieve coughs

ROBITUSSIN-PE®

Each 5 ml teaspoonful contains:
Guaifenesin, NF. 100 mg
Pseudoephedrine** Hydrochloride, NF 30 mg
Alcohol, 1.4%
**Formerly contained Phenylephrine Hydrochloride 10 mg

Decongestant action helps control cough and clear stuffy nose and sinuses. Non narcotic.

ROBITUSSIN-CF®

Each 5 ml teaspoonful contains:
Guaifenesin, NF. 50 mg
Phenylpropanolamine Hydrochloride, NF 12.5 mg
Dextromethorphan Hydrobromide, NF. 10 mg
Alcohol, 1.4%

All Robitussin formulations available on your Rx or Recommendation.

A. H. Robins Company, Richmond, Va. 23220 A·H·ROBINS

For many years Robins has spotlighted the expectorant action of the Robitussin cough formulations by featuring action photographs of steam engines. In keeping with this tradition, the company recently commissioned a well-known illustrator to render full-color drawings of several classic locomotives... accurate to the minutest detail. The first of the series is now available. To order your print suitable for framing, write "Robitussin Clear-Tract Engine #1" on your Rx pad and mail to "Vintage Locomotives," Dept. T4, A. H. Robins Company, 1407 Cummings Drive, Richmond, Va. 23220.



The William Mason (1856)

When you call our computer, it talks back.

That's right. It answers in a clear, *human* voice. And tells you, step by step, exactly how to record a customer account transaction. Repeats itself to assure accuracy. Then gives you a total balance for final verification.

It's all push-button easy, because it's all done by touch-tone telephone. All you do is call in on a special Valley Bank number. And have a nice little chat with our talking Accounts Management computer.

Something else. Immediately upon cut-off each month, all the paper work is handled automatically. Itemized customer statements stuffed, mailed out. Duplicates, recaps, reports sent to you promptly.

So if you average over 100 customer statements a month, get acquainted with our talking computer. We'll introduce you. Just call us. In Phoenix: 261-1666. In Tucson: 792-7370.



A touch-tone phone puts you in touch.

We go out of our way for you.
Valley National Bank

VALLEY NATIONAL BANK

More than 150 offices throughout Arizona
Deposits insured to $40,000 by Federal Deposit Insurance Corporation

What can you do to help solve the nation's rural health problem?

Here's where to begin:
29th National Conference on Rural Health
Hyatt Regency, Phoenix, Arizona
April 7-9, 1976

Rural health problems are serious. If they are to be solved, the participation of many health professionals is vital.

You'll earn 12 prescribed AAFP hours and inform yourself on the latest directions in rural health care delivery by attending this important conference sponsored by the American Medical Association.

By far the most comprehensive rural health conference ever initiated, it features 20 roundtable discussions and 13 workshops. Among the many topics: Developing Rural Emergency Medical Services, Consumer Health Education, Primary Health Care Networks, Medical School Outreach, Small Community Hospitals, Migrant Health Services, Health Systems Agencies, Indian Health Services, Rural Health System Development, Role of Women in Medicine, New Health Practitioners, and International Rural Health Programs. A cardiopulmonary resuscitation course is also being offered on a first-come, first-serve basis to 40 participants.

Use the coupon to register now!

Three 2-day excursions to Las Vegas, Grand Canyon, and Guaymas, Mexico are available after the conference. For details, write: Ambassador Travel Service, 3800 Central Ave., Phoenix, Arizona 85014 or call (602) 277-1411.

Return to:
Department of Rural and Community Health
American Medical Association
535 North Dearborn Street
Chicago, Ill. 60610

NRHW
National Rural Health Week
April 4-10, 1976

☐ Please register me for the 1976 National Conference on Rural Health in Phoenix. **Enclosed is my $40 registration fee.** (Includes conference, buffet dinner, 2 luncheons, 1 breakfast, and a Community Action Kit for National Rural Health Week.)

☐ Sign me up for the CPR course.

Also, sign me up for these optional events:

☐ Western style dinner at Reata Pass$10

Conference trips offered: 2 p.m. to 9 p.m. April 9.

☐ Intercommunity Network clinic$6

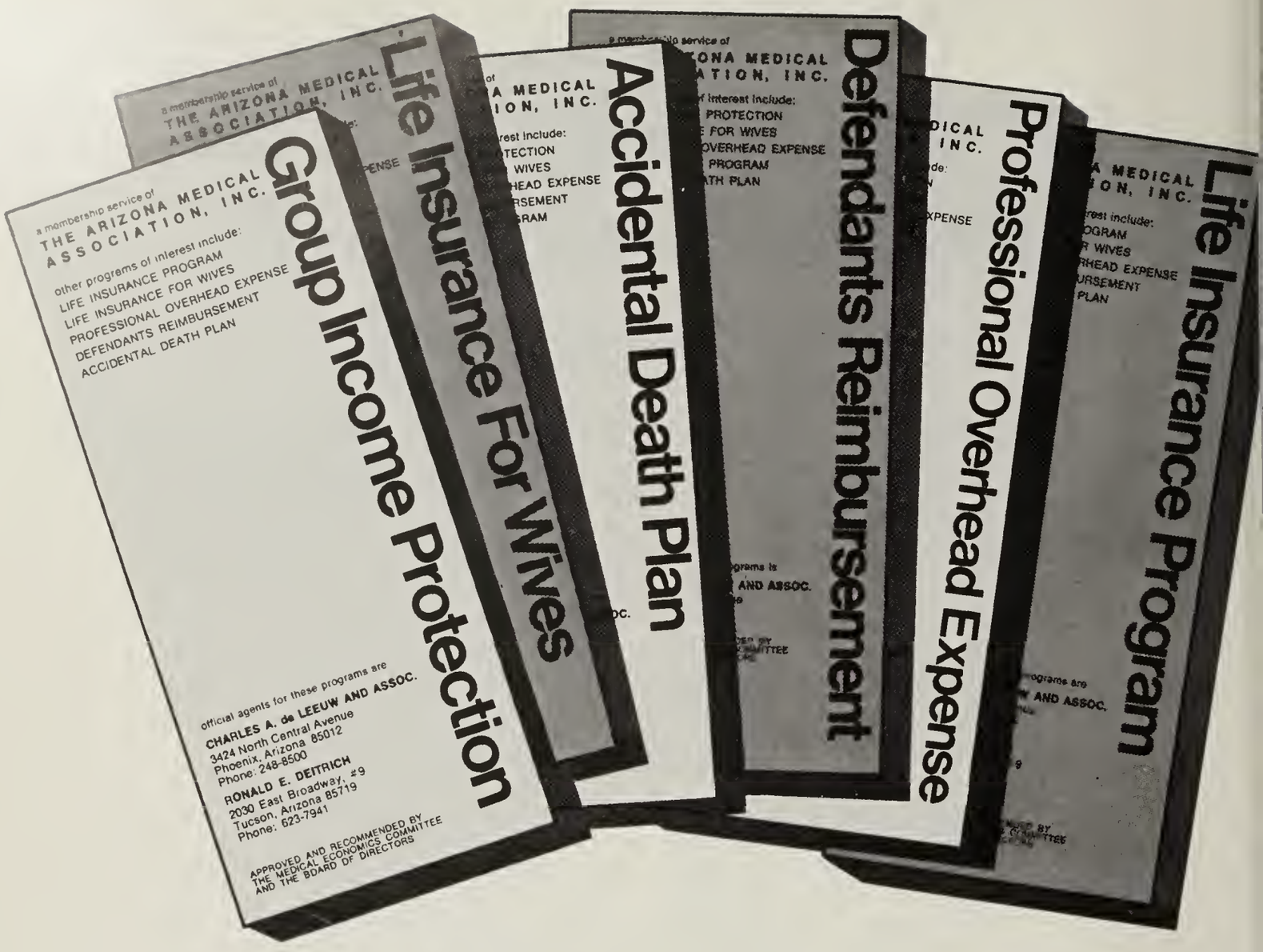
☐ Hospital-centered health service program$6

Name _____

Address _____

City _____ State _____ Zip _____

Make check payable to AMA.
(PM-901-1838-505)



Quality protection
Association approved & recommended

1. These 6 plans were especially created for the medical profession under the auspices of The Arizona Medical Association as a unique membership service. Approved by the Medical Economics Committee.

2. In addition to excellence of coverage there is supervision and control by your Association.

3. In many instances... a substantial saving in required premiums.

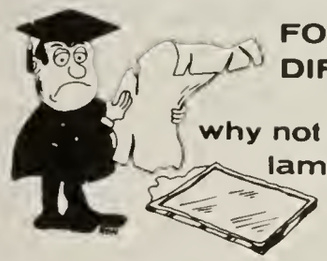
4. Inquiries may be directed to the Association office or to the licensed resident agents.

THE ARIZONA MEDICAL ASSOCIATION, INC. ORGANIZED 1892 ARIZONA INCORPORATED 1950

Charles A. deLeeuw and Assoc.
3424 N. Central Ave.
Phoenix, Az. 85012
248-8500

Ronald Deitrich
2030 E. Broadway, Suite 9
Tucson, Az. 85719
792-1020

YOU WORKED HARD



FOR THAT DIPLOMA..

why not have it laminated?

it will last a lifetime....

THE PLAQUE SHOP

Wood plaques — Ready to hang
No glass to break — Moisture proof
Dirt proof — Impressive.
Our plaques are manufactured locally.

arizona laminating service inc

7231 EAST FIRST AVENUE •
SCOTTSDALE, ARIZONA 85251 •
(602) 945-9338

MEDICAL BOOKSTORE



The only bookstore in Arizona devoted exclusively to books for the medical profession.

MEDICAL BOOKSTORE
College of Medicine
University of Arizona
Tucson, Arizona 85724
Phone: 882-6669

HOBBY HORSE RANCH SCHOOL

A School For Exceptional Children

The Hobby Horse Ranch School is both home and school for a small group of children. It welcomes the child who is mentally retarded and physically handicapped as well as the backward child who suffers no physical handicap.

The Hobby Horse Ranch School is a branch of Fairview School in Fishkill, New York which was established in 1936.

Directors: Blanche C. Lightowler, B.A.
Matthew W. Lightowler

P.O.B. 44, Cortaro, Ariz.



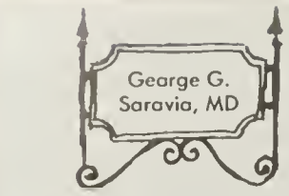
Emergency — our business

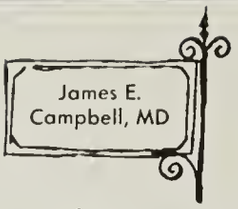
Air Evac — serving all Arizonans — can be ordered by any physician anytime to transport a patient anywhere. Medically trained flight crew is airborne in 30 minutes.

(602) 254-7150

AIR EVAC®

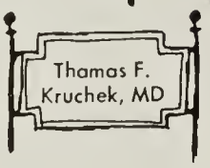
Samaritan Health Service
Phoenix, Arizona



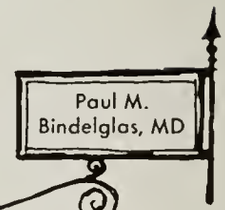


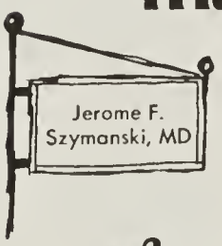


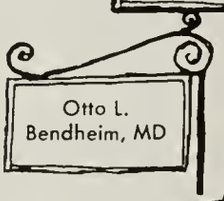
These shingles make A great building



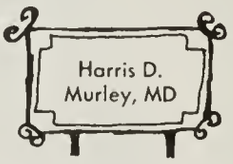


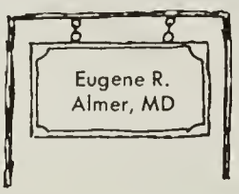


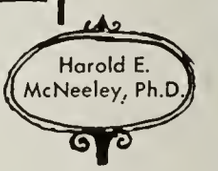














Camelback Professional Building

5051 N. 34th STREET
PHOENIX, ARIZONA 85018
(602) 955-6200

general psychiatry / child psychiatry / psychoanalysis, clinical psychology / and family counseling.

MEETING NOTICE

Phoenix Medical History Club

March 29, 1976

7:30 p.m.

Arizona Medical Association

810 W. Bethany Home Rd.

Phoenix, AZ 85013

Drygulch Jake — Speaker

For Further Information Contact

Clifford E. Ernst, M.D.

909 E. Brill St.

Phoenix, AZ

85015

ArMA OFFERS A NEW INSURANCE FORM FOR ALL CLAIMS

An order today will stop the confusion of multiple insurance forms
Sample available on request

COST: $1.75 per hundred

To: Arizona Medical Association
810 West Bethany Home Rd.
Phoenix, AZ 85013

Please send me hundred approved insurance forms costing $1.75 per hundred.

NAME

Address

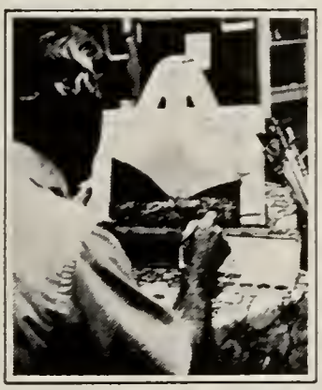
Bill me ☐ Payment Enclosed ☐

Medical Center X-Ray and Clinical Laboratory

1313 North 2nd Street
Phoenix, Arizona
Phone 258-3484

CLINICAL PATHOLOGY
DIAGNOSTIC X-RAY
PORTABLE X-RAY AND E.K.G. SERVICE
ELECTROCARDIOGRAPHY

R. Lee Foster, M.D., F.A.C.R., F.A.C.P., Director
Diplomates of American Board of Radiology
George B. Kent, Jr., M.D., Consultant Pathologist





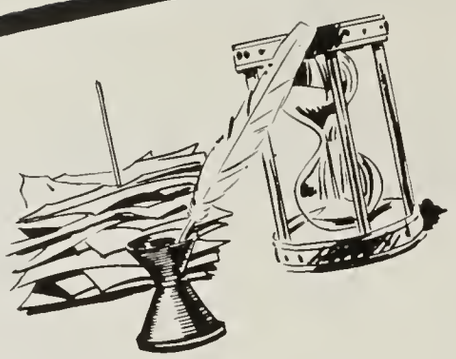

a structured program for the patient.

Every detail for the patient's well-being is carefully planned and evaluated in conjunction with his personal physician

CH
camelback hospital
5055 north thirty-fourth street
phoenix, arizona 85018

A NON-PROFIT COMMUNITY PSYCHIATRIC HOSPITAL

Memo



FROM:

Carl T. Kirchmaier, M.D.
Medical Director

Doctor:

The current legislative scenes are crowded with bills of vital interest to your future and to ours. Medicaid, Catastrophic, Malpractice and National Health Insurance are being acted upon by various states and the Federal government.

Many elected officials are responsive to groups who advocate total government control -- and financing -- of health care.

The health insurance industry has long been politically active in grass roots and high level efforts to achieve prudent balance between proper health care for our citizens and the free enterprise system.

The medical profession and the insurance industry are allies in their stands against further Federal encroachment of the health care field.

THE HBA LIFE INSURANCE COMPANY
1337 N. FIRST ST. (P.O. BOX 1272), PHOENIX, AZ 85001 (602) 258-4885

Pharmacy Directory

FAIRMONT PHARMACY

AN INDEPENDENT
WITH
CHAIN STORE PRICES

3231 East McDowell Road, Phoenix, Arizona

BRidge 5-5719 **Free Delivery**

FREE RADIO EQUIPPED DELIVERY

In Scottsdale call

Lute's Scottsdale Pharmacy

For

PRESCRIPTIONS

3904 N. Scottsdale Rd. 945-8420 - 945-8429

Next to the 1st National Bank

Open 'til 10 p.m. daily — 9 p.m. Sundays

FREE DELIVERY

CALL

254-2606

IF BUSY CALL 252-1573

"Satisfying Customers Since 1920"

- COSMETICS
- SUNDRIES
- SODA BAR
- LIQUOR



MacALPINE'S
DRUG STORE
THE Rexall STORE
2303 N. 7th ST.
DON BRISCOE – PHARMACIST

Classified

DANNY T. SEIVERT INSURANCE

Professional Programs for Professional Men

70 E. Mitchell Dr., Suite 6
Phoenix, Arizona 85012
263-9090

JOHNSON-BOZZANI
PORSCHE | AUDI

1976 911, NEW 912E, 914 NOW IN STOCK

DAVE NEAL
SALES & LEASING



320 N. CENTRAL AVENUE
PHOENIX, ARIZONA 85004
PHONE (602) 253-1161



Medical Transcription For Physicians and Hospitals

MULLEN MEDICAL SERVICE, INC.

4445 North 36th Street
Phoenix, Arizona 85018
Telephone (602) 955-0763

DOCTORS' CENTRAL DIRECTORY

Helen M. Barrasso, R. N., Director

For Emergencies or in Absence of Your Doctor

CALL 327-7471

At Your Service 24 Hours Daily

2807 East Speedway Tucson, Arizona

"Established 1932"

MICRO-BILLING

The burden-free, low-cost statement service that saves you time, space and money. Positively accurate billings go on time every month regardless of work load, illness, or vacations. No contract to sign, equipment to purchase, or change required to existing posting procedures. Micro-billing also provides positive protection against fire, theft or damage to your valuable records. Call 265-4729, or write American Billing Corp., 4014 N. 7th Street, Phoenix, AZ 85014.

FOR LEASE

Office for lease, available for immediate occupany. 825 Sq. Ft., fully decorated. "Century Medical Plaza," 1701 W. St. Mary's Road #171. Call 623-5479.

KINGMAN

Am retiring April 1, 1976. Same location next to Post Office since 1940. Reasonable overhead. Want only fair price for equipment. Will leave active records. Contact: Walter Brazie, M.D., Drawer 631, Kingman, AZ. Phone: 753-3222 or 753-3224.

SUBLEASE OFFICE

Office to sublease at $6.00 sq. ft. Bright, colorful and located just 3 minutes from Desert Samaritan Hospital, Mesa. Phone 838-3312 for appointment to see.

FOR LEASE

1720 West Wetmore, Tucson — Oracle North Medical Center, office and practice space now available. Footage varies, suitable for any medical profession, M.D., Dentist, Optometrist and Pharmacy, etc. Good community potential. Decorate to suit tenant. Phone: Bidegain Realty, Tucson, 298-1855.

TOWNHOUSE

Doctor to rent or sell — Glendale area

Mediterranean Gardens, Spanish style home. 2 bedroom, 2 bath with built-ins. Perfect for one or two folk who need an office area. Includes: Dishwasher, range, garbage disposal, laundry area, 2 car garage and storage. Extra features: high beamed ceiling, atrium, block fenced yard and **ultimate** privacy. Also pool and clubhouse privileges. Excellent condition. Owner must move by April 1st. Rent for $325/month. Contact realtor for sale price. Prefer no large dogs.

Century 21 Realty
Paragon
Ask for Venda
997-7435

FOR RENT

Prestige location on North Central Avenue near Uptown Plaza. Suitable for a surgeon in building occupied by an internist. If interested call 264-9881.

SHARE NEW OFFICE

Established surgical sub-specialist has deluxe new office designed for two M.D.'s by Tucson Medical Center Hospital. Will sub-lease separate examining rooms to another M.D., sharing office facilities and expenses. 5200 E. Grant Road, Suite 101, Tucson. Phoenix 881-8544.

STANFORD UNIVERSITY SCHOOL OF MEDICINE
OFFICE OF POSTGRADUATE MEDICAL EDUCATION

presents

BASIC SCIENCE FOR CLINICIANS

AT STANFORD UNIVERSITY • MARCH 1-5, 1976

This five-day interdepartmental course is a concise but comprehensive review of basic medical science and is designed to meet the needs of those clinicians who wish to expand their knowledge of molecular biology. Early registration is advised as attendance is limited. Tuition fee is $250 payable upon application for enrollment.

General lectures will cover a review of chemistry and physics for clinicians, chemical bonds of biological importance, subatomic particles, correlation of cell structure and function, the structure and function of proteins, sugars and lipids, the structure of nucleic acids, DNA synthesis, expression of genetic information, regulation of gene expression, evolution of proteins, carbohydrate and fat metabolism, bioenergetics, neuroendocrine relationships, neurobiology: structure and development, neurobiology: function, neurobiology: a cellular approach to the nervous system, mutagenic hazards.

Elective sessions will include the biology of water, structure of matter, bacterial antibiotic resistance, salt and water, interferon, blood coagulation, gastrointestinal immunity, energy supply and the design of the brain, tumor virus, genetics and disease, rheumatic disorders, organ morphogenesis, nutrition, enzymes and their actions, prostaglandins, atherosclerosis, hypertension, renin, and aldosterone, chromosomes and disease, mechanisms of immunity, genetics: problems and opportunities, nerve growth, hormones and their actions, molecular mechanisms of drug actions, biological membranes.

A faculty of 27 Stanford University biomedical scientists, including four Nobel Laureates, will take part in the program.

BASIC AND APPLIED PHARMACOLOGY

AT STANFORD UNIVERSITY • MARCH 29-APRIL 2, 1976

The objective of this five-day course is to familiarize physicians, and others involved in clinical pharmacology, with the concepts of modern drug use. The program includes an in-depth review of the basic principles and the practical aspects of drug action. **The course is intended to assist physicians in their daily clinical work.** Tuition fee is $250 payable upon enrollment, and advance registration is required.

Morning lectures will review important principles of chemistry and biochemistry and will deal with molecular mechanisms of drug actions; routes of administration; elimination, metabolism, and time course of drug action; toxicity and idiosyncrasy; tolerance and physical dependence; teratogenesis, mutagenesis, carcinogenesis; and drug interactions. Afternoon informal seminars will cover the rapidly changing field of applied pharmacology.

Forty-three faculty members of the Stanford University School of Medicine will participate.

IN HAWAII

MANAGEMENT OF THE SURGICAL PATIENT

AT MAUNA KEA BEACH HOTEL • MAY 1-8, 1976

This course is designed for all physicians, non-surgeons as well as surgeons, who participate in the care of surgical patients. It includes lectures and informal conferences dealing with the practical aspects of management of a variety of surgical problems, and an alternate series of concurrent sessions reviewing the fundamental concepts of molecular biology. In addition there will be seven problem-solving sessions on acid-base and blood gas disorders.

Tuition fee is $275, payable with $110 room deposit to Stanford University School of Medicine upon application for enrollment. Group flights departing Saturday, May 1, and returning Saturday, May 8, may be available from San Francisco and Los Angeles, as well as reduced tour airfares from other originating cities. Early application is advised.

FOR COMPLETE DETAILS SEND COUPON

Clip and mail to: OFFICE OF POSTGRADUATE MEDICAL EDUCATION
Stanford University School of Medicine, Room TA145, Stanford, California 94305

BASIC SCIENCE FOR CLINICIANS enroll me ($250 check enclosed) ____ send brochure ____

BASIC AND APPLIED PHARMACOLOGY enroll me ($250 check enclosed) ____ send brochure ____

MANAGEMENT OF THE SURGICAL PATIENT .. enroll me ($385 check enclosed) ____ send brochure ____

NAME _____ _____ Specialty _____
Last First (please print)

ADDRESS _____ ZIP _____

(Checks payable to STANFORD UNIVERSITY SCHOOL OF MEDICINE)

Index to Advertisers

American Billing Corp. 165

Arizona Laminating 161

Armour Pharmaceuticals 76

Blue Shield 154

Burroughs Welcome
Neosporin Ointment 87

Camelback Hospital 163

Camelback Professional Bldg. 162

Classified 165, 166

Doctors Central Directory 165

Eli Lilly
Kefzol 88

HBA Life Insurance 164

Hobby Horse Ranch School 161

Johnson Bozzani 165

Medical Bookstore 161

Medical Business Consultants 82

Medical Center X-Ray and Clinical Labs 163

Merck Sharp and Dohme
Indocin 136, 137, 138

Mullen Medical Service 165

National Casualty Co. 160

Pharmacy Directory 165

Pharmaceutical Manuf. Assoc. 78, 79

PVO
Saffola 81

A. H. Robins
Donnagal 155
Robitussin 156, 157

Roche Labs
Valium Second Cover, 75
Dalmane 84, 85, 86
Bactrim Third Cover
Bactrim Fourth Cover

Roerig & Co.
Antiver 135

Roswell Bookbinding 82

Rural Health Conference 160

Samaritan Health Service 161

Stanford University 167

Smith, Kline & French
Dyazide 83

Danny T. Sievert
Insurance 165

Valley National Bank 158

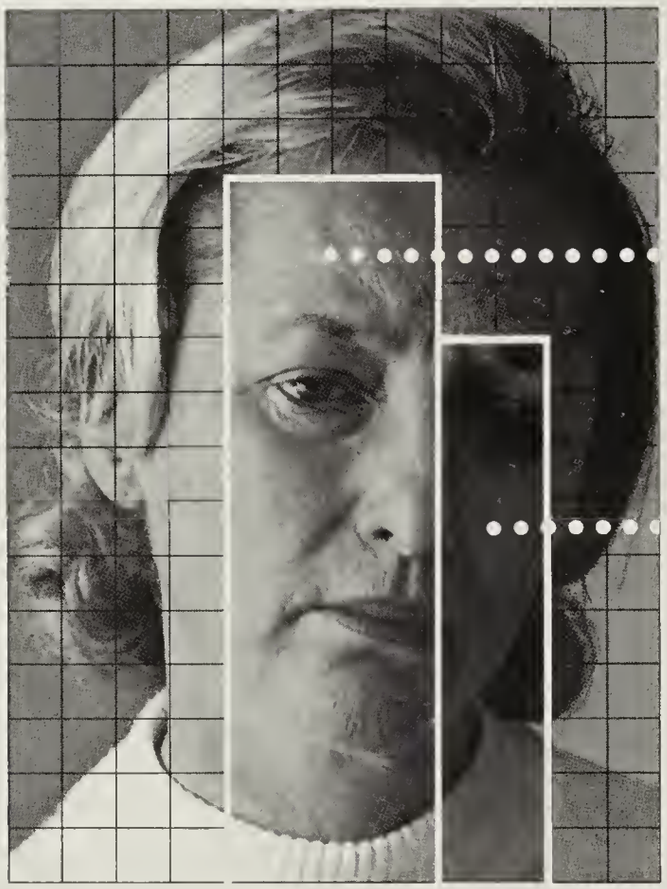
Westwood Pharmaceuticals
Presun 80

ARIZONA MEDICINE



LIBRARY
U.S. SAN FRANCISCO

Both often



Predominant psychoneurotic anxiety

Associated depressive symptoms

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequen and/or severity of grand mal seizures m require increased dosage of standard an convulsant medication; abrupt withdraw may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous in gestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) hav occurred following abrupt discontinuanc (convulsions, tremor, abdominal and mu cle cramps, vomiting and sweating). Kee addiction-prone individuals under carefu

respond to one

According to her major
nptoms, she is a psychoneu-
ic patient with severe
xiety. But according to the
scription she gives of her
lings, part of the problem
y sound like depression.
is is because her problem,
hough primarily one of ex-
sive anxiety, is often accom-
nied by depressive symptom-
logy. Valium (diazepam)
provide relief for both—as
excessive anxiety is re-
ved, the depressive symp-
ns associated with it are also
en relieved.

There are other advan-
es in using Valium for the
nagement of psychoneu-
ic anxiety with secondary
pressive symptoms: the
chotherapeutic effect of
lium is pronounced and
id. This means that im-
vement is usually apparent
in the patient within a few days rather than in a week or two, although it may take longer in some patients. In addition, Valium (diazepam) is generally well tolerated; as with most CNS-acting agents, caution patients against hazardous occupations requiring complete mental alertness.

Also, because the psychoneurotic patient's symptoms are often intensified at bedtime, Valium can offer an additional benefit. An *h.s.* dose added to the *b.i.d.* or *t.i.d.* treatment regimen can relieve the excessive anxiety and associated depressive symptoms and thus encourage a more restful night's sleep.



Valium®
(diazepam) Ⓘⓥ

2-mg, 5-mg, 10-mg scored tablets

in psychoneurotic
anxiety states
with associated
depressive symptoms

veillance because of their predisposi-
to habituation and dependence. In
gnancy, lactation or women of child-
ring age, weigh potential benefit
inst possible hazard.

cautions: If combined with other psy-
tropics or anticonvulsants, consider
efully pharmacology of agents em-
yed; drugs such as phenothiazines,
cotics, barbiturates, MAO inhibitors
other antidepressants may potentiate
action. Usual precautions indicated in
ients severely depressed, or with latent
ression, or with suicidal tendencies.
Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

YOU ARE THE JUDGE

the evidence is in.

	LETTER® (sodium levothyroxine, Armour) Tablets	SYNTHROID® (sodium levothyroxine)
Sodium levothyroxine:	YES	YES
Less Expensive:	YES*(Costs 10% less)	NO
Potency Coded Tabs:	YES (Armacode®)	NO
Color-Coded Tabs:	YES	YES
Scored Tabs:	YES	YES
7 Tablet potencies:	YES (0.15 mg. is new)	NO

EXHIBIT "A"

Doctor: Please write your verdict.

*American Druggist Blue Book, 1975.

LETTER®

(Sodium Levothyroxine, Armour) Tablets

Armour Pharmaceutical Company, Phoenix, Arizona 85077

MARCH 1976/Vol. 33, No. 3

ARIZONA MEDICINE

JOURNAL OF ARIZONA MEDICAL ASSOCIATION • MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

EDITOR'S PAGE

EDITOR'S PAGE
MEDICAL EDUCATION, 194
John W. Kennedy, M.D.

DEAN'S PAGE

INTERVIEWING THE PATIENT, 195
Neal A. Vanselow, M.D.

EDITORIAL

SOCIAL SECURITY A COSTLY ADMINISTRATOR, 228

DIRECTORY

Medical Society of the United States and Mexico, 244

Sociedad Medica de Estados Unidos do Northe America y Mexico, 244

Officers and Committees, 244

Index to Advertisers, 252

COVER

We welcome the University of Utah as guest faculty for the 85th Annual Meeting of ArMA. Program page 209.

Published monthly by The Arizona Medical Association, Inc., with offices at 810 W. Bethany Home Rd., Phoenix, Arizona 85013. Subscription $10 a year, single copy $1.00. Second class postage paid at Phoenix, Arizona, and at additional mailing offices.

ORIGINAL ARTICLES
PERFORATED AMEBIC COLITIS: CASE REPORT AND REVIEW OF THE LITERATURE, 181
M. Ray Kenoyer, M.D.
Charles A. Allen, M.D.
Terry L. Due, M.D.
Steve Schaffner, M.D.
Harry W. Hale, M.D., FACS

THE PA (PHYSICIAN ASSISTANT) WHAT ARE THEY? 187
Charles E. Horan, P.A.

SOUTHERN ARIZONA—A SKIN CANCER FACTORY, 191
Michael M. Schreiber, M.D.

MIXED CONNECTIVE TISSUE DISEASE: A CASE REPORT, 192
Joseph M. Kennedy, M.D.

OBSTETRICS AND GYNECOLOGY
OBSTACLES IN OBSTETRICS—GYNECOLOGY, 196
Tommy Evans, M.D.

CLINICAL ONCOLOGY IN ARIZONA
ESTROGEN RECEPTORS: MARKERS OF HORMONAL DEPENDENCE OF BREAST CANCER, 198
Terence S. Herman, M.D.

ENDOCRINOLOGY AND METABOLISM
MEDICATIONS: GOOD VS. BAD, 201
Marshall B. Block, M.D.

RADIOLOGY CASE OF THE MONTH
CASE NUMBER 8
Irwin M. Fruendlich, M.D.

SEMINARS IN CHEST MEDICINE
PEDIATRIC PULMONARY ILLNESSES—EXTENT, CONCERNS AND HOPES, 205
Lynn M. Taussig, M.D.

DEPARTMENT OF HEALTH SERVICES
LOCAL ALCOHOLIC RECEPTION CENTERS, 208
Suzanne Dandoy, M.D.

85TH ANNUAL MEETING PROGRAM, 209

REPORT ON THE HOUSESTAFF SECTION
NATIONAL HOUSESTAFF ACTIVITIES, 229
Gordon R. Tobin, M.D.

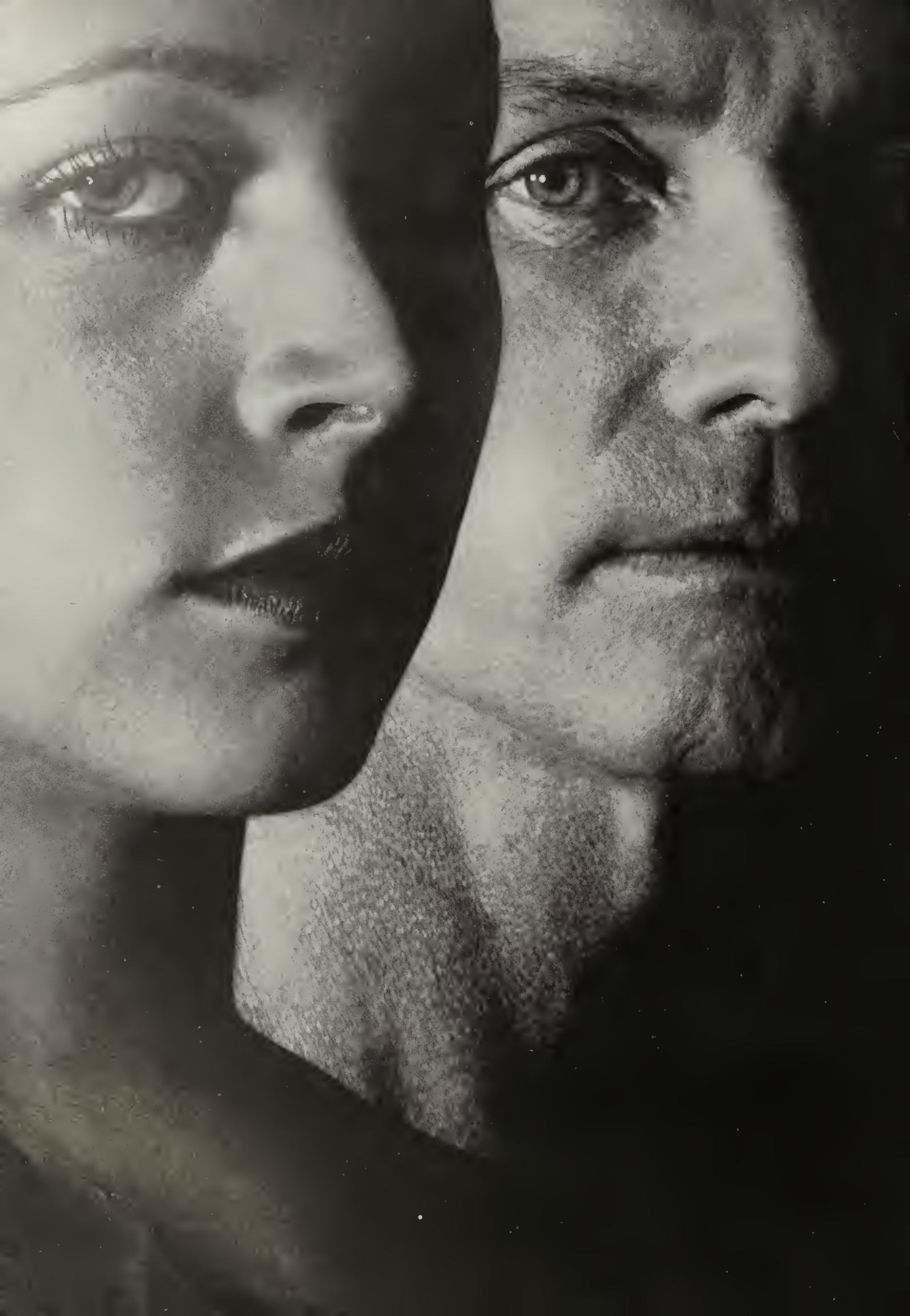
LETTERS TO EDITOR, 229

ARMA MEDICAL HISTORY
THE PRESCOTT VA CENTER, 230
Wenona C. Clark

ARIZONA MEDICAL HISTORY QUIZ—II, 235

ARMA REPORTS, 235

FUTURE MEDICAL MEETINGS, 240



Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct non-therapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.

P·M·A
Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D. C. 20005

PRACTICE MANAGEMENT WILL SAVE YOU WORRY AND EXPENSE

Every medical practice *needs* a business manager — but most doctors are so busy serving their patients that they don't have the time to set up an office that runs smoothly and profitably. I can help.



A Naval Academy graduate, I have 30 years of training and experience in business law, electronics, personnel training, and property management. My associates were major consultants for NASA's medical facility for Apollo missions.

You will benefit from our knowledge of office staffing and equipment, fee structure, billing collections, office partnerships and liability protection.

Let us survey your procedures and show you how to save time, worry and expense. First talk at no obligation to you.

MEDICAL BUSINESS CONSULTANTS
Philip Kwart, *Director*
3225 North Central Avenue, Suite 300-B
Phoenix, Arizona 85012 Phone (602) 264-3803

WE BIND YOUR PERIODICALS

Preserve your reference journals as beautifully Bound Books. Choose from 30 different colors of durable Library Buckram or Imitation Leather.

$8.50 per volume, including name imprint

Inquire about quantity discounts.

Free local pick up and delivery on 10 volumes or more.

ROSWELL BOOKBINDING

2614 North 29th Avenue
PHOENIX, ARIZONA 85009
272-9338

ARIZONA MEDICINE

Address all correspondence to the
Journal Offices
810 W. Bethany Home Rd.,
Phoenix, Arizona 85013

Bruce E. Robinson
Business Manager

National Representative
John Murphy
State Medical Journal
Advertising Bureau, Inc.
711 South Boulevard
Oakpark, Illinois 60302

"The material in this journal is not copyrighted. We ask that anyone using material from it note the previous publication in ARIZONA MEDICINE."

CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

1. Manuscripts, including references or bibliography, should be typewritten, double-spaced, on one side of the paper only, and the original and a carbon enclosed.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

5. The Journal reserves the right to edit all material.

6. Reprints will be supplied to the author at printing cost.

Your United Banker can reduce your tax bite.



United Bankers can now offer you two tax sheltered plans to cut your tax bite now...while you build retirement security for the future.

NO PENSION/PROFIT SHARING PLAN?

If you work but are not covered by a company pension/profit sharing plan, you qualify for a tax sheltered United Bank Individual Retirement Account (IRA). It lets you protect up to $1500 a year from the tax man until you retire. An IRA plan at United Bank could reduce your annual tax by several hundred dollars.

SELF-EMPLOYED?

If you're self-employed you could qualify for a United Bank Keogh retirement savings plan. It lets you protect up to $7500 a year from income tax until you retire. It could reduce your annual tax bite by up to $3750 and your funds can be invested in a variety of ways.

For more information or to obtain detailed brochures, contact any United Banker.

The Businessman's Bank

UNITED BANK
OF ARIZONA

An affiliate of U|B Financial Corporation
MEMBER F.D.I.C.

What can you do to help solve the nation's rural health problem?

Here's where to begin:
29th National Conference on Rural Health
Hyatt Regency, Phoenix, Arizona
April 7-9, 1976

Rural health problems are serious. If they are to be solved, the participation of many health professionals is vital.

You'll earn 12 prescribed AAFP hours and inform yourself on the latest directions in rural health care delivery by attending this important conference sponsored by the American Medical Association.

By far the most comprehensive rural health conference ever initiated, it features 20 roundtable discussions and 13 workshops. Among the many topics: Developing Rural Emergency Medical Services, Consumer Health Education, Primary Health Care Networks, Medical School Outreach, Small Community Hospitals, Migrant Health Services, Health Systems Agencies, Indian Health Services, Rural Health System Development, Role of Women in Medicine, New Health Practitioners, and International Rural Health Programs. A cardiopulmonary resuscitation course is also being offered on a first-come, first-serve basis to 40 participants.

Use the coupon to register now!

Three 2-day excursions to Las Vegas, Grand Canyon, and Guaymas, Mexico are available after the conference. For details, write: Ambassador Travel Service, 3800 Central Ave., Phoenix, Arizona 85014 or call (602) 277-1411.

Return to:
Department of Rural and Community Health
American Medical Association
535 North Dearborn Street
Chicago, Ill. 60610

NRHW
National Rural Health Week
April 4-10, 1976

☐ Please register me for the 1976 National Conference on Rural Health in Phoenix. **Enclosed is my $40 registration fee.** (Includes conference, buffet dinner, 2 luncheons, 1 breakfast, and a Community Action Kit for National Rural Health Week.)

☐ Sign me up for the CPR course.

Also, sign me up for these optional events:

☐ Western style dinner at Reata Pass $10

Conference trips offered: 2 p.m. to 9 p.m. April 9.

☐ Intercommunity Network clinic $6

☐ Hospital-centered health service program $6

Name _____

Address _____

City _____ State _____ Zip _____

Make check payable to AMA.

(PM-901-1838-505)

What You should know about the medical malpractice insurance crisis!



Doctor:

The officers and employees of HBA Life, through the petition which was circulated by your Association, supported our Legislature's efforts to bring about a fair and manageable medical malpractice bill.

Over 90% of HBA Life's Home Office staff willingly endorsed the petition.

A further example of the rapport with which our Company and the medical profession has always shared.

THE HBA LIFE INSURANCE COMPANY

1337 N. FIRST ST. (P.O. BOX 1272), PHOENIX, AZ 85001 (602) 258-4885

When you call our computer, it talks back.

That's right. It answers in a clear, *human* voice. And tells you, step by step, exactly how to record a customer account transaction. Repeats itself to assure accuracy. Then gives you a total balance for final verification.

It's all push-button easy, because it's all done by touch-tone telephone. All you do is call in on a special Valley Bank number. And have a nice little chat with our talking Accounts Management computer.

Something else. Immediately upon cut-off each month, all the paper work is handled automatically. Itemized customer statements stuffed, mailed out. Duplicates, recaps, reports sent to you promptly.

So if you average over 100 customer statements a month, get acquainted with our talking computer. We'll introduce you. Just call us. In Phoenix: 261-1666. In Tucson: 792-7370.



A touch-tone phone puts you in touch.

We go out of our way for you.
Valley National Bank

VALLEY NATIONAL BANK

More than 150 offices throughout Arizona
Deposits insured to $40,000 by Federal Deposit Insurance Corporation

85th ANNUAL MEETING
ARIZONA MEDICAL ASSOCIATION
SAFARI HOTEL, SCOTTSDALE

TUESDAY — APRIL 27, 1976

1 P.M. — HOUSE OF DELEGATES AND BLUE SHIELD CORPORATE BODY MEETINGS

WEDNESDAY — APRIL 28, 1976

8 A.M. — REFERENCE COMMITTEE MEETINGS — open to all members
12 NOON — GOLF AND TENNIS TOURNAMENTS
7 P.M. — PAUL SHANK'S FABULOUS STEAK FRYS — steaks, cocktails, fun

THURSDAY — APRIL 29, 1976

7 A.M. — "THE IMPAIRED PHYSICIAN" — a breakfast panel program
9 A.M. — 5 P.M. — 33 SCIENTIFIC PRESENTATIONS FROM WHICH TO CHOOSE (four concurrent sessions all day long)
7 P.M. — ArMPAC RECEPTION
8 P.M. — ArMPAC BANQUET

FRIDAY — APRIL 30, 1976

7 A.M. — "THE MALE MENOPAUSE" — a breakfast panel program
9 A.M. — 5 P.M. — 36 SCIENTIFIC PRESENTATIONS FROM WHICH TO CHOOSE (four concurrent sessions all day long)
7 P.M. — PRESIDENT'S RECEPTION
8 P.M. — PRESIDENT'S BICENTENNIAL BANQUET

SATURDAY — MAY 1, 1976

8 A.M. — HOUSE OF DELEGATES AND BLUE SHIELD CORPORATE BODY MEETINGS

Make Reservations Now!

Kefzol®
cefazolin sodium

Ampoules, equivalent to 250 mg., 500 mg., 1 Gm., and 10 Gm. of cefazolin



Lilly

Additional information available to the profession on request.
Eli Lilly and Company
Indianapolis, Indiana 46206

600062

Original Articles

PERFORATED AMEBIC COLITIS:

CASE REPORT AND REVIEW OF THE LITERATURE

M. RAY KENOYER, M.D.
CHARLES A. ALLEN, M.D.
TERRY L. DUE, M.D.
STEVE SCHAFFNER, M.D.
HARRY W. HALE, JR., M.D., F.A.C.S.

A good review of a problem that you would expect to more frequently encounter in this southwest area.

Complications of amebic infestation are rare. In a series of 1062 cases of amebiasis reported by Rives[1] there were 92 complicated cases, 82 of which were related to liver abscesses. The incidence of perforation and peritonitis complicating amebiasis was reported as less than 0.5% by Grigsby[2] and 6% by Chen.[3] In two large autopsy series, perforation and peritonitis comprised 10.7% and 30.4% of fatal cases of amebiasis.[4,5] *Although the incidence is reasonably low, the mortality is extremely high. Baker*[6] reported a 75% mortality rate in adults and 100% mortality rate in children. In the series reported by Chen, seven of the eight patients died.

Whereas medical therapy is usually the only treatment necessary for most complications of amebiasis, there can be little doubt of the need for surgical intervention when free perforation and peritonitis occur. For the surgeon who rarely encounters amebiasis, confrontation with intra-abdominal abscesses due to multiple colon perforations can be overwhelming.

This is a report of two cases of perforated amebic colitis at Maricopa County General Hospital, Phoenix, Arizona. The diagnosis was not made in either case preoperatively but certain aspects of each case should have alerted those in attendance to an unusual etiologic agent as the cause of an acute surgical abdomen.

CASE REPORTS

Case 1: A 58 year old Mexican male was admitted to the surgical service for a presumed, spontaneously drained appendiceal abscess following acute appendicitis. The patient had complained of low abdominal cramping pain for a month prior to admission. Continuing diarrhea, for which he was treated on three

From: Department of Surgery and Medicine, Maricopa County General Hospital, Phoenix, Arizona

Reprint requests should be addressed to Dr. Harry Hale, Jr., Chairman, Department of Surgery, Maricopa County General Hospital, Phoenix, Arizona 85008

occasions, resulted in a 20 pound weight loss. This progressed to bloody diarrhea and abdominal distention five days before he was admitted.

On physical examination the patient had a temperature of 99.8 degrees, pulse rate of 108, respirations of 20, and a normal blood pressure. Positive physical findings included minimal scleral icterus, a mildly distended abdomen, minimal ascites, generalized abdominal tenderness, and a fullness on rectal examination. Initial laboratory studies disclosed a hemoglobin of 14.5 gms.%, hematocrit of 43.6 gms.%, and a white blood cell count of 12,000 cu. mm. with a moderate left shift. Flat and upright x-rays of the abdomen were interpreted as showing multiple air-fluid levels and a reflex ileus. Sigmoidoscopy showed a perforation of the rectum at 10 centimeters with drainage of foul-smelling, gray-brown necrotic tissue and stool.

Following admission, intravenous fluids, cephalothin and cephaloridine were administered. Increased abdominal distention and loss of normal peristalisis developed. The patient was taken to the operating room and underwent exploration for ruptured appendicitis with intra-abdominal abscess formation. Upon opening the abdomen foul-smelling fluid was encountered. On further examination multiple colon perforations were found including the posterior wall of the cecum, two areas in the ascending colon, a two centimeter defect in the transverse colon, and two nearly circumferential necrotic portions of sigmoid colon. A subtotal colectomy and ileo-sigmoidostomy was performed.

Amebic cysts and trophozoites were identified the following day from a smear taken at laparotomy and Emetine was begun. (Fig. 1) The remaining clinical course was punctuated by periodic temperature elevations to 103 and 104 degrees and two episodes of hypotension that ultimately resulted in acute renal failure. Chloroquine, Tetracycline, and flagyl were eventually added to the anti-amebic regimen. As the patient's condition deteriorated tracheostomy became necessary. Signs of anastamotic disruption occurred on the 17th postoperative day and the patient was returned to the operating room for exploration. At laparotomy the distal ileum was necrotic which necessitated ileostomy and mucous fistula formation. Two days following the last operative procedure the patient had a cardiorespiratory arrest and died. Necropsy failed to reveal any other sites of infestation.

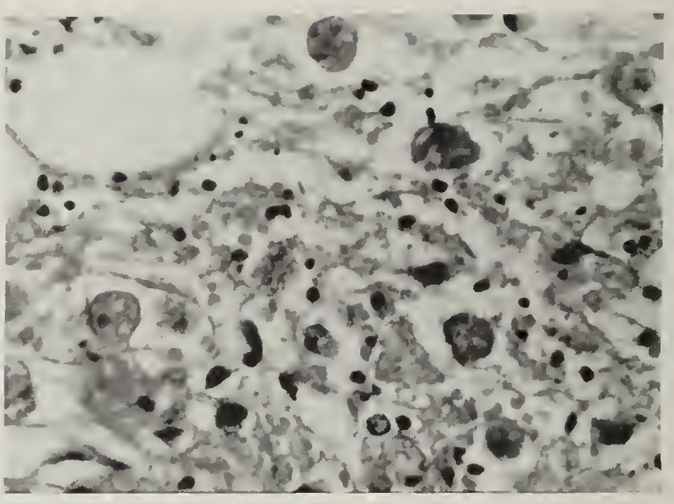


Figure 1
Amebic cysts and trophozoites from peritoneal fluid.

Case 2: A 65 year old Mexican male, sought medical attention for diarrhea of one month duration that had become bloody during the last week of the illness. This was accompanied by non-cramping pain felt most notably in the left lower quadrant. In addition there had been a 30 pound weight loss over two months. Physical examination showed an acutely ill male with a temperature of 97.4 degrees, pulse of 88, respirations of 18, and a blood pressure of 144/92. Pertinent physical findings were a distended abdomen that was soft to superficial palpation but tender throughout to deep palpation with generalized rebound tenderness. The bowel sounds were high-pitched and decreased. Laboratory studies performed in the emergency room showed a hemoglobin of 13.1 gms.%, hematocrit of 41 gms.%, and a white blood cell count of 56,000 cu.mm. with a marked left shift. Abdominal x-rays were unremarkable showing only gas in the descending colon. No free air was seen. The patient was admitted to the medical service for evaluation.

Following admission sigmoidoscopic examination was done and an apparent extrinsic mass obstructing the colon was noted at 10 centimeters from the anal verge. Two biopsies were taken. A surgical consultation was requested for evaluation and treatment for an obstructing lesion of the colon. The consulting service felt that the patient may have a carcinoma of the colon and that a period of hydration and antibiotic administration should be attempted prior to any surgical procedure. Approximately 12 hours later the patient developed abdominal rigidity, severe hypotension, and shock. Resuscitation was



Figure 2

Resected signoid colon with transmural necrosis (bottom, center).



Figure 3

Resected signoid colon with necrotic antimesenteric border.

accomplished with crystalloid and colloid fluid infusion, parenteral steroids, and antibiotics. Following restoration of blood pressure and urine output the patient was taken to surgery with the preoperative diagnosis of perforated carcinoma of the colon. At exploration 80% of the circumference of the rectum proximal to the peritoneal reflection was necrotic. A similar lesion was noted in the sigmoid colon. (Fig. 2, 3) A portion of mid-sigmoid colon was near perforation. The anterior wall of the cecum was necrotic and an 8 centimeter opening was partially sealed by omentum. The distal rectum was transected and oversewn, a sigmoid colectomy done, and the distal end matured as a mucous fistula. The cecum was exteriorized with a tube ileostomy. The patient expired in the intensive care unit 1 hour following surgery from profound sepsis and cardiorespiratory arrest. Histologic examination of the rectal biopsies and segment of colon revealed numerous cysts and trophozoites of Entameba histolytica.

DISCUSSION

Despite the close proximity of our institution to an area prevalent with Entamoeba histolytica few cases of amebiasis are diagnosed and treated. Our greatest exposure has been to intestinal amebiasis in the pediatric age group and hepatic abscesses in the adult population. Amebic colitis was not considered preoperatively in these patients.

The presumptive diagnoses seemed well-founded initially, however, certain aspects of the mode of presentation were inconsistent. The quality and extent of the antecedent diarrhea was not fully appreciated. Acute appendicitis and its complications do not generally present as bloody diarrhea. Moreover the association of jaundice, hepatomegaly, and rectal perforation with diarrhea should have prompted examination of the stool for ova and parasites. The degree of leukocytosis in the second case was suspicious of acute leukemia and was out of proportion to the physical findings. Smear for ova and parasites was non-diagnostic. The most significant findings in both cases were the protracted illness associated with continued diarrhea that progressed to bloody diarrhea. The drainage was characteristic in both cases being foul-smelling, liquid, and having a streaked gray-brown appearance.

Objective evidence of perforated amebic colitis may be difficult to obtain. Chen reported intraperitoneal air in only two of eight cases.[2] Stool examination for ova and parasites may be negative in over half of the cases.[3] Indirect-hemaglutination titers may not be readily available. Suspicion of the disease, however, may alter treatment schedules. Amebicidal drugs would have been administered preoperatively had the diagnosis been entertained in our two cases.

Few cases of generalized peritonitis secondary to intestinal perforation in amebic disease have been reported.[1,7,8] The largest series was reported by Chen from the National Taiwan University Hospital. From 1959 to 1969 seven of eight cases of perforated amebic colitis died. All patients had multiple colon perforations with peritonitis, except one survivor who had cecal perforation only and was treated by exteriorization. The most common initial diagnosis was peritonitis of unknown etiology. Most cecal lesions were mis-diagnosed as appendicitis and sigmoid lesions were thought to have been diverticulitis. One case reported by Torres[7] was thought to represent carcinoma of the colon with perforation, the diagnosis we entertained in the second case. High mortality rates are explained by delayed diagnosis, intraperitoneal rupture, multiple sites of perforation, and mixed peritoneal infections following rupture. Judy reported on eight survivors of amebic colitis but none were found to have free intraperitoneal rupture with peritonitis.[9]

Several investigators concerned with complications following surgical procedures in colonic amebiasis advise against reconstructive operations in untreated disease.[1,2,3,7,10] Resection and primary anastamosis are contra-indicated due to chronic infection, malnutrition, and hypoproteinemia. Exteriorization and colostomy or ileostomy are the procedures of choice with total colectomy reserved for multiple perforations not suited to the more conservative procedures. The advisability of operative intervention in any type of amebic colitis is questionable, whether the clinical situation is caused by amebic infestation alone or in combination with secondary microbial infection. Herein lies the diagnostic dilemma.[8,9]

The procedures of incision and drainage and prevention of peritoneal contamination by fecal diversion are hallmarks of surgical therapeutics. The concept of nonoperative treatment of perforated colonic disease with generalized peritonitis, regardless of cause, does not seem tenable. Use of multiple tube colostomies as advocated by Rives[1] is inviting but would have been impractical in our cases due to the size of the perforations. Exteriorization of single perforations is encouraged. We believe that total colectomy and ileostomy should be performed in the untreated patient with multiple perforations. Anastomotic disruption following resection and primary closure leads to further peritoneal contamination with death resulting from microbial sepsis and not systemic amebiasis.

SUMMARY

Two patients with perforated amebic colitis succumbed to complications associated with their disease. A review of available literature indicates that extra hepatic gastrointestinal complications of amebiasis are unusual and associated with high mortality rates. Minimal operative procedures are advised for those patients with localized disease. Salvage rates are increased with earlier diagnosis and preoperative administration of amebicidal drugs. Multiple perforations and peritonitis require earlier operative intervention and aggressive surgical therapy. We now recommend total colectomy and ileostomy for those patients with diffuse peritonitis from multiple colon perforations due to Entamebic histolytica.

Intestinal amebiasis is endemic in the United States and is reported to affect from 5 to 15% of the population. It is estimated however, that only 5% of those infected develop clinical symptoms. The severity of disease in those with clinical symptoms is highly variable ranging from mild discomfort to abdominal tenderness and flatulence to bloody diarrhea and the well known dysentery syndrome.

BIBLIOGRAPHY

1. Rives, J.D., Heibner, W.C., Powell, J.L.: The surgical complications of amebiasis of the colon. Surg. Clinics North Amer. 35: 1421-1426, 1955.
2. Grigsby, W.P.: Surgical treatment of amebiasis, Surg Gynec Obstet 128: 609-627, 1969.
3. Chen, W.J., Chen, K.M., Lin, M.: Colon perforation in amebiasis, Arch Surg 103: 676-680, 1971.
4. Clark, H.C.: Distribution and complications of amebic lesions found in 186 post-mortem examinations. Amer J Trop Med. 5: 157-172, 1925.
5. Kean, B.H.: Amebic hepatitis; absence of diffuse lesions at autopsy and in biopsies. Arch Intern Med 96: 667-672, 1955.
6. Baker, E.M.: Colonic perforations in amebiasis. Afr Med J 32: 634-638, 1958.
7. Torres, A.: Amebiasis, Arch Surg 95: 249-252, 1967.
8. Hayman, L.D., Weaver, T.H.: Perforation of the colon with intra-abdominal abscess formation due to amebiasis, Gastroent 23: 97-102, 1953.
9. Judy, K.L.: Amebiasis presenting as an acute abdomen. Amer J Surg 127: 275-279, 1974.
10. Hawe, P.: The surgical aspects of intestinal amebiasis. Surg Obstet Gynec 81: 387-404, 1945.

DYAZIDE®

Trademark

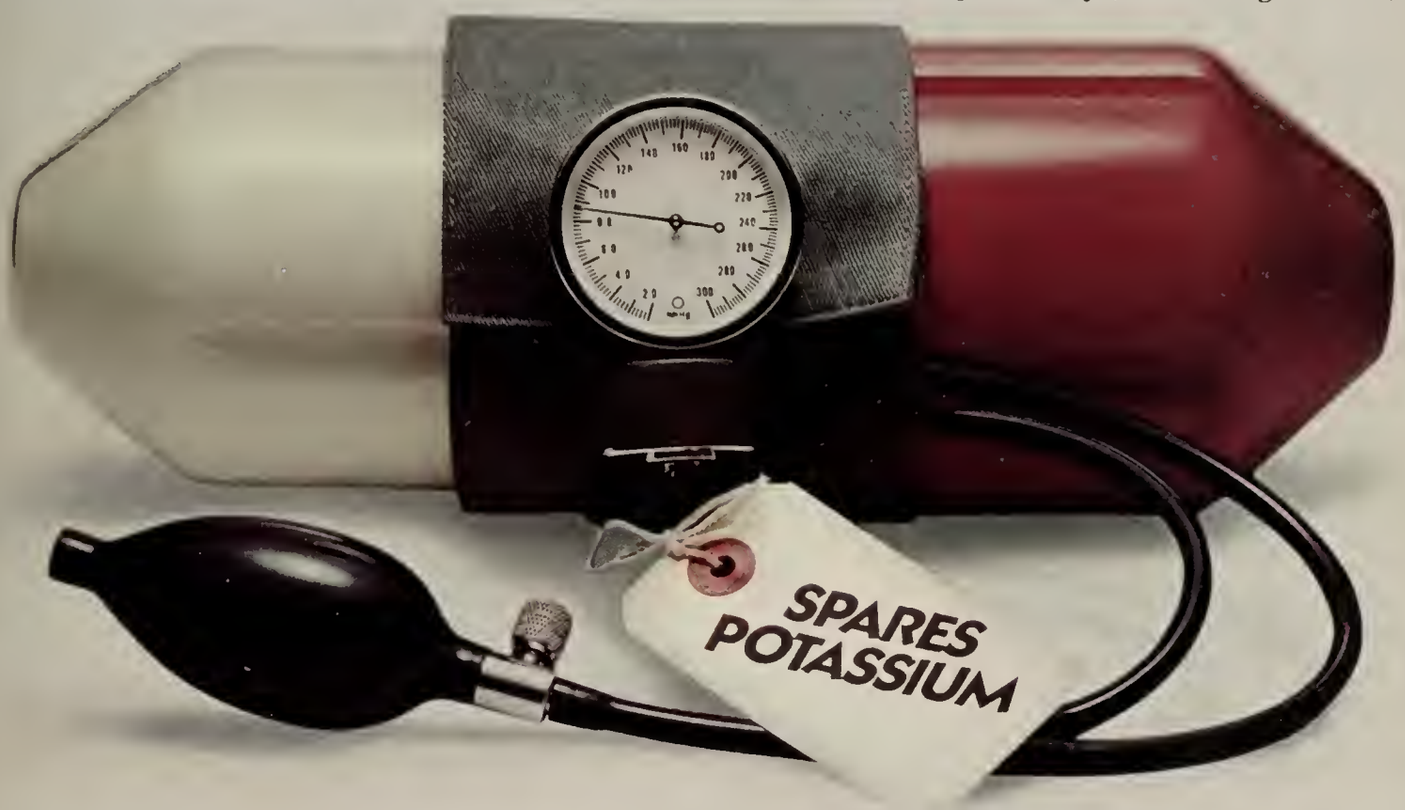
Each capsule contains 50 mg. of Dyrenium® (triamterene, SK&F) and 25 mg. of hydrochlorothiazide.

MAKES SENSE

TRIAMTERENE CONSERVES POTASSIUM WHILE HYDROCHLOROTHIAZIDE LOWERS BLOOD PRESSURE

FOR LONG-TERM CONTROL OF HYPERTENSION*

Serum K^+ and BUN should be checked periodically. (See Warnings Section.)



Before prescribing, see complete prescribing information in SK&F literature or *PDR*. The following is a brief summary.

* **Warning**
This fixed combination drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

***Indications:** *Edema:* That associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. *Mild to moderate hypertension:* Usefulness of the triamterene component is limited to its potassium-sparing effect.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 capsules; in Single Unit Packages of 100 (intended for institutional use only).

SK&F Co., Carolina, P.R. 00630
Subsidiary of SmithKline Corporation



Big Balanced Rock, Chiricahua Mountains, Arizona (approx. 1,000 tons)

□ Found useful in the management of vertigo* associated with diseases affecting the vestibular system.
□ Can relieve nausea and vomiting often associated with vertigo.*
□ Usual adult dosage for Antivert/25 for vertigo:* one tablet t.i.d.
□ Also available as Antivert (meclizine HCl) 12.5 mg. scored tablets, for dosage convenience and flexibility.
□ Antivert/25 (meclizine HCl) 25 mg. *Chewable* Tablets for nausea, vomiting and dizziness associated with motion sickness.

BRIEF SUMMARY OF PRESCRIBING INFORMATION

*INDICATIONS. Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

Effective: Management of nausea and vomiting and dizziness associated with motion sickness.

Possibly Effective: Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

The administration of meclizine to pregnant rats during the 12-15 day of gestation has produced cleft palate in the offspring. Limited studies using doses of over 100 mg./kg./day in rabbits and 10 mg./kg./day in pigs and monkeys did not show cleft palate. Congeners of meclizine have caused cleft palate in species other than the rat.

Meclizine HCl is contraindicated in individuals who have shown a previous hypersensitivity to it.

WARNINGS. Since drowsiness may, on occasion, occur with use of this drug, patients should be warned of this possibility and cautioned against driving a car or operating dangerous machinery.

Usage in Children: Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

Usage in Pregnancy: See "Contraindications."

ADVERSE REACTIONS. Drowsiness, dry mouth and, on rare occasions, blurred vision have been reported.

More detailed professional information available on request.

ROERIG Pfizer
A division of Pfizer Pharmaceuticals
New York, New York 10017

Antivert®/25
(meclizine HCl) 25 mg. Tablets
for vertigo*

THE PA (PHYSICIAN ASSISTANT) WHAT ARE THEY?

CHARLES E. HORAN, P.A.

The American Medical Association sponsors and accredits four types of physician assistant education programs: Orthopedic PA (1969); Assistant to Primary Care Physician (1971); Urologic Physicians Assistant (1972); Surgeons Assistant (1974), in all about sixty approved programs are operational. As with any new departure in medical practices PA's have met with acclaim or faint praise. Twenty-eight PA's are now licensed by the Arizona Board of Medical Examiners. This article reviews some of the background and present status of PA's. Your comment and experiences invited—Editor.

From: 450 W. 4th Place, Mesa, AZ 85001, (Mr. Horan is Vice President Pres. Elect, Arizona State Assoc. of Physicians Assistant.)

The training of primary care physician assistants was developed in detail by the American Medical Association Council on Medical Education in co-operation with the American Academy of Family Physicians, the American Society of Internal Medicine, the American College of Physicians, the American College of Pediatrics and the American Association of Medical Colleges.

These prestigious bodies, realizing that help was needed and that the physician shortage was truly a problem, attempted to develop a new health professional who could relieve the physician of routine tasks that traditionally were performed only by a physician. These evaluative, diagnostic and therapeutic tasks, each to be decided by the individual supervising physician would enable him, the physician, to spend more time and energy accomplishing other more technical tasks through more effective use of his skills, knowledge, and abilities.

The initial problem defined, this group then took upon itself the added task of determining

what the professional requirements would be to hold such a position. They formed a Task Force to the National Academy of Sciences who set forth goals to include a minimum of one thousand hours academic instruction in the sciences and sufficient clinical exposure to insure insight to patient care. Especially, the student would be exposed to clinical rotations under the supervision of the resident teaching staff and in conjunction with medical students. The difference being that the physician assistants would not become deeply involved in the academic or esoteric aspects of the disease process. They would concentrate on the more visible aspects of etiology, presentation and course of the disease. A formal course was usually two years duration. An added requirement imposed by most of the universities was that the student also have at least two years of college and two thousand hours of direct patient care before applying to the school.

The name "Physician Associate" was originally used by Duke University in its pilot program. This caused some problems and the House of Delegates of the American Medical Association decided in 1971 that the term "Physicians Associate" would be used only to designate another physician.

Upon completion of an approved course, a new PA then could apply for certification in the state in which he wished to practice. Each state has similar yet different requirements. In Arizona, the Arizona Board of Medical Examiners is the governing authority for Physician Assistant licensure. They have set the criteria after obtaining legistative authority to have PA's in the state. A PA making application to the Board of Medical Examiners must be sponsored by a MD or DO licensed to practice in the State of Arizona. He must submit a job-description of the duties to be performed, plus certificates, and academic qualifications. These are reviewed by the Board of Medical Examiners and a license is then issued enabling the PA to practice under the supervision of a physician.

Although the training and background of the PA is usually as a "generalist" he can be trained in any specialty. He can assume any routine task that a physician feels the PA is capable of performing by experience and training and which is within the scope of the practicing physician. This gives a flexible base to the utilization of physician assistant in the medical practice of medicine. The physician is the one who determines those tasks that the PA is capable of performing. The PA's supervising physician is totally responsible for the actions of the physician assistant. By state law only one physician assistant is authorized per M.D. or D.O.

In the text book "Family Practice" by Kohn Kachel, and Johbson the role of the PA is defined as follows, "the physician assistant is capable of collecting historical and physical data from the patient, he organizes this data and presents it to the physician in such a way that the supervising physician can visualize the medical program and determine the appropriate diagnostic and therapeutic steps, in addition the physician assistant is capable of helping the physician by performing many diagnostic and therapeutic procedures. While he functions under the direct supervision of the physician, the physician assistant may, under physician defined circumstances, perform selected diagnostic or therapeutic procedures without immediate surveillance by the physician. For example, in the physician's office, the physician assistant may obtain the appropriate historical, physical, and laboratory data and x-ray information concerning the patient's complaint. At this point he may take one of three courses of action, (1) refer the patient to the physician directly for further examination, and treatment, (2) consult with the physician about appropriate diagnostic and therapeutic steps that the physician assistant will carry out or (3) initiate certain appropriate therapeutic procedures which were previously designated and listed by the supervising physician as being within the scope of his function. In this last instance the physician assistant will present the physician with a summary record of the complaint, findings, laboratory data and therapeutic steps initiated.

How has the physician assistant been accepted? On national level and state wide there has been excellent patient acceptance. Physician's have shown an increase of 30-100% productity, with the cost of the physician assistant being covered by the increased productivity.

The physician assistant can save the physician time that can be converted to increased productivity and greater ease of practice, and provide more time for family life and continuing education.

No. 3
As potent as the pain it relieves.

e.g. the pain of
surgical convalescence



NOT TOO LITTLE

- as potent as the pain you need to relieve in patients with fractures, sprains, strains, wounds, contusions, and the pain of surgical convalescence
- unlike acetaminophen/codeine combinations, it does not sacrifice anti-inflammatory action

NOT TOO MUCH

- potent—yet not excessive
- addiction liability low

NOT TOO EXPENSIVE

- brand-name quality, yet reasonable in cost
- readily available in both hospital and local pharmacies

CIII CONVENIENCE

- telephone Rx in most states, up to 5 refills in 6 months at your discretion (where state law permits)

EMPIRIN® COMPOUND WITH CODEINE NO. 3

codeine phosphate* (32.4 mg) gr ½
Each tablet also contains: aspirin gr 3½, phenacetin gr 2½, caffeine gr ½. *Warning—may be habit-forming

Wellcome | Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

PreSun®

(5% PABA LOTION)

may help prevent harmful effects of the sun such as premature aging of skin and skin cancer.*



*Information on file at Westwood Pharmaceuticals Inc

WESTWOOD
PHARMACEUTICALS INC.
Buffalo, New York 14213

©1974, W P. Inc

SOUTHERN ARIZONA — A SKIN CANCER FACTORY!

MICHAEL M. SCHREIBER, M.D.

More cancers occur on the skin than any other site of the human body. The most common types of skin cancer, Basal Cell Carcinoma and Squamous Cell Carcinoma, have their highest incidence in regions of the earth where sunlight is most intense and in areas of the body exposed most to the sunlight.

For the past 70 years, it has been known that these two types of skin cancer are caused almost exclusively by solar ultraviolet radiation between 290 nm and 320 nm. Those wave lengths less than 290 nm are extremely dangerous to living tissue, so fortunately, wave lengths less than this are completely absorbed by the ozone layer in our atmosphere. Of those light rays reaching the earth's surface, 99% are greater than 400 nm and 1% are between 290 - 400 nm. Of this, only .2% falls in the skin damaging range (290-320 nm).

Many geographic and meterological factors govern the amount of harmful radiation reaching the skin. The most important is latitude — the lower the latitude in the Northern Hemisphere the greater the damage. Other factors include altitude, time of the year, time of day— all affecting the distance rays of sun have to travel through the filtering effect of the atmosphere, scattering effect of rays by the atmosphere, reflection from surrounding surfaces, number of cloudless days, temperature of air, humidity and wind.[1]

The human factors include the type of skin (fair haired, blue eyed, light skinned individuals are most susceptable to damage), the amount of time spent in the sun, extent of coverage by clothing, and activity (activities in reflective surroundings, i.e. sand, snow).

Southern Arizona is unique in possessing all of these geographic, meterologic, and human factors in optimum amounts providing for intense and prolonged sunlight exposure. Previous studies attest to this fact;[1, 2] southern Arizona in 1969 had an incidence of 422 cancers per 100,000 population, which is much greater than other reported incidences in the United States.

The development of skin cancer depends on the cumulative dose of ultraviolet radiation governed by the above factors. Thus Basal Cell and Squamous Cell Carcinomas would be almost 100% preventable if people could avoid all sun exposure. Since this is not only unrealistic but impossible, it becomes necessary and obligatory for all physicians to educate the populace in the use of sunscreening and sunblocking agents.

On viewing the multitude of sun protective and tanning preparations at the pharmacy, it becomes obvious that people need guidance on what to use. Many of these items are only slightly effective (allowing tanning) or completely useless.

Sunscreens are either physical (deflect light by forming a barrier) or chemical (absorb particular wave lengths of light) agents. Each type has its own disadvantages and advantages.

The physical agents are opaque and thus cosmetically unacceptable, however, they do block out almost 100% of the ultraviolet light. Examples are zinc oxide paste, titanium dioxide, ferric chloride, bentonite, red veterinary petrolatum.

The chemical sunscreens are complex chemicals absorbing wave lengths in the sun tanning and burning ranges. They are cosmetically acceptable but their effectiveness depends on the vehicles into which they are incorporated (alcohol solutions cause penetration of the active ingredient into the stratum corneum and are not easily washed off, as are creams and lotions). These agents can cause a primary irritation or sensitization, and some stain clothing, eg. paraaminobenzoic acid. One other factor is the selective wave length absorption of the different chemicals. To achieve optimum effectiveness these preparations should be used daily whether or not sun exposure is anticipated. Examples of these sunscreens are benzophenones (UVAL, Solbar), paraaminobenzoic acid (Pabanol, Paba Gel), esters of aminobenzoic acid (PreSun, Pabafilm, BLOCK OUT, Eclipse), cinnamates (Sundare, Skolex), salicylates (Coppertone), digalloyl trioleote (Neo A-Fil), anthranilates (Maxafil). The most effective of these being PABA and esters of aminobenzoic acid.

One excellent sunscreen that has both chemical and physical blocking capacity is A-fil cream (anthranilate plus titanium dioxide).

From: 5402 E. Grant Rd., Bldg. F., Tucson, AZ 85712

Since the southern Arizona sun produces the highest incidence of skin cancer in the United States, it is the obligation of all physicians in our state to make our patients aware of this and educate them in detection and protective measures.

BIBLIOGRAPHY

1. Schreiber MM, et al: The incidence of skin cancer in southern Arizona (Tucson). Arch. Derm 104:124, 1971.
2. Schreiber MM, Shaprio SI: Thirteen year survey of skin cancer incidence in the private practice of dermatology. Cutis 12:750, 1973.

MIXED CONNECTIVE TISSUE DISEASE: A CASE REPORT

JOSEPH M. KENNEDY, M.D.

Mixed connective tissue disease (MCTD), a subset of Systemic Lupus Erythematosis (SLE), is being increasingly recognized as an entity. MCTD may begin as rheumatoid arthritis and later evolve into other connective tissue diseases sequentially or may present with features of two or three connective tissue diseases simultaneously (Overlap Syndrome). Usually the patient has symptoms and signs of SLE, systemic sclerosis (scleroderma) and/or polymyositis. There is a high titer of antibody to extractable nuclear antigen (ENA) and, more specifically, antibody to ribonulceoprotein (RNP). Antibody to DNA is usually absent. The diagnosis is important because the prognosis is usually better than SLE without antibody to RNP, unless there is major organ involvement, as in this case.

The most common clinical characteristics of patients with MCTD are polyarthralgia/polyarthritis, Raynaud's phenomenon, diminished esophageal motility, decreased pulmonary diffusing capacity, swollen hands, myositis, lymphadenopathy, skin rash, sclerodermatous changes and fever. Less common findings include serositis, hepatomegaly, splenomegaly, neurologic abnormalities, Sjogren's syndrome and Hashimoto's thyroiditis. Renal disease occurs only in 5% of patients. The high frequency of pulmonary involvement was not stressed previously.

In a recent multicenter cooperative study the age range was from 9 to 80 years with a mean of 37 years. Patients have been predominately female (84 percent).

Following is a case report of a patient who died with the disease including pulmonary hypertension, after a hysterectomy.

HISTORY

This 44 year old gravida 2, para 2, Caucasian lady, had intermittent musculoskeletal pain as a child but did relatively well until 1973, when she developed the gradual onset of progressive fatigue, weight loss, skin rash and loss of hair. The skin problem was treated by a dermatologist with topical medication, following a biopsy which showed "dermatitis". Six months later she again developed fatigue, weight loss, generalized swelling of the hands rather than joint swelling and Raynaud's phenomenon: when exposed to cold her hands turned white then blue then red. On occasion she has had transient joint swelling. A year prior to this hospital admission she lost considerable weight; down from her normal 130 pounds to 113 pounds. At that time also she developed chest symptoms of cough, productive of purulent sputum, dyspnea and chest discomfort. Climbing two flights of stairs brought on dyspnea.

Past History: She had undergone multiple surgical procedures; breast biopsy, surgery for nasal septum deviation and D&C. At the time of her last childbirth she developed a severe urinary tract infection. In the summer of 1974 she underwent lymph node biopsy. This showed reactive hyperplasia. Bone marrow aspiration at that time was normal. In 1949, when she was found to have a false positive serology. She underwent extensive studies at the Bethesda Naval Hospital which were negative. **Habits:** No alcohol. She smokes less than a pack of cigarettes a day. **Family History:** Mother is living but her health is unknown. Father died of unknown disease. A brother is healthy except for an eye problem. No sisters. Two children have asthma. She did not know of relatives with rheumatologic problems. **System Review: GI:** Poor appetite. Considerable weight loss. Chronic lower abdominal pain. No change in bowel habits. **Chest:** As above. No orthopnea. No paroxysmal nocturnal dyspnea. GU: No dysuria. **GYN:** Irregular menstrual periods with heavy flow.

From: 926 E. McDowell Road, Phoenix, AZ 85006

ON EXAMINATION

A well appearing, well developed, well nourished, middle aged lady, alert and cooperative, in no acute distress. Vital signs; weight 116 3 4, temperature 97.4, blood pressure 108 82, pulse 90. **HENT:** There is a well healed surgical scar on the right lateral neck. She opens her mouth normally. **SKIN:** There is acneiform pitting on the cheeks. There is both vitiligo and hyperpigmentation of the skin. Telangiectasias are present. The palms are cool, moist and red. After her hand is immersed in an ice bath, the Raynaud's phenomenon is demonstrated with sequential color changes, pale to blue to red. Pitting and scarring are present both on the trunk and extremities. On the lower back there is a darkly pigmented area of the skin which was attributed to a heating pad burn. **LYMPH NODES:** Generalized moderate lymphadenopathy. **NECK:** Thyroid not enlarged. Well healed surgical scar on the right lateral neck. **CHEST:** Expands well. **HEART:** Regular sinus rhythm; no murmurs. **LUNGS:** Clear to percussion and ausculatation. **BREASTS:** No masses. Surgical scar left breast. **ABDOMEN:** Soft. Liver, kidney, spleen, masses not felt. **EXTREMITIES:** Hands: There is generalized swelling rather than synovitis. Elbows: Limitation of motion of the elbows which extend to 175°. No subcutaneous nodules. Knees: Pain on motion but normal range of motion.

Investigations

Normal Investigations: Hemoglobin 12.7, hematocrit 38.8, indices normochromic normocytic. Creatinine, bilirubin, SGOT, alkaline phosphatase, LDH, uric acid, cholesterol, phosphorus, calcium and albumin.

Abnormal Investigations: Serum iron 47. Total protein 9.8. Sed rate 33.

Radiologic Investigations: Chest x-ray shows abnormal appearance of the pulmonary segment and left hilus without other signs of cardiac or pulmonary findings. Right hand shows no significant bone or joint or soft tissue abnormality.

On August 14, 1975, she underwent panhysterectomy and expired three days later.

Autopsy Findings: Autopsy shows the presence of generalized nonspecific lymphadenopathy a lymphoid hyperplasia in the portal triads of the liver and the subcapsular areas of the kidneys, peculiar basophilic degeneration of collagen in the larynx, heart and skin and a "scleroderma-like" interstital fibrosis of the heart, especially the right ventricular outflow tract region. On microscopic examination perivascular lymphorrhagia is noted in the iliopsoas muscle. Peculiar arteriolar lesions are noted in the lungs. There is focal interstitial fibrosis, but this is not a diffuse feature. The striking finding, though subtle, is the presence of multiple small pulmonary arterioles and capillaries showing obliteration by a glassy eosinophilic material not resembling platelet thrombi. They have a fibrillar appearance and are partially or totally occluding several of the vessels. Associated endothelial hyperplasia and hypertrophy are noted: There is no evidence of a vasculitis or pneumonitis. The pleurae are thickened and fibrotic. Major pulmonary emboli are not demonstrable.

Immunoligic Investigations: Antinuclear antibody positive 1 to 320 dils. No LE cells demonstrated. RA test negative. VDRL weakly reactive. ENA antibody titer greater than 1:100,000. DNA antibody titer negative. RNase treated ENA titer: eliminated.

Summary

The patient had typical symptoms, signs, immunologic and histologic findings of mixed connective tissue disease. The predominant clinical problem leading to pulmonary hypertension was the scleroderma-like intimal proliferation of pulmonary arterioles.

Comment

MCTD is to be suspected if a patient has symptoms and signs of SLE with overlap features of other connective tissue disorders sequentially or simultaneously. Characteristically the ANA is high and the antibody to DNA is negative. Confirmation is obtained with antibody to the RNP antigen of ENA. The sclerodermatous features of the syndrome are least likely to respond to steroids but other symptoms, especially those of polymyositis, usually do so.

REFERENCES

1. *Bulletin on the Rheumatic Diseases.* "Mixed Connective Tissue Disease." Vol. 25 No. 9, 1974-1975 Series, p. 828-831.
2. Sharp, Gordon C., et. al. Mixed Connective Tissue Disease—An apparently distinct rheumatic disease syndrome associated with a specific antibody to an extractable nuclear antigen (ENA) *American Journal Med.* 52: 148-159, 1972.
3. *Systemic Lupus Erythematosis:* A Clinical Analysis. Fries and Holman, 1975.

MEDICAL EDUCATION

JOHN W. KENNEDY, M.D.



The medical school, where you did your medical studies, assiduously bombards you—concerning the curricula, the need for funds, and excuses why they cannot accept all applicants.

The "cold facts" are collected annually and the 75th Annual Report by the American Medical Association is instructive. A few items of trends are extracted from this mass of data.

MEDICAL SCHOOLS

As of October 1975 there were 107 United States and Canadian schools approved to award the M.D. degree.

Five schools have provisional approval; and will be again surveyed as students reach the fourth year, and only two schools which offer only the first two years of basic science. (Those of us who came out of two year schools have mixed reactions. Some of us found that on transfer into the third year class of a four year school—we were far behind our peers).

You may be astounded to learn that there has been very little change in the medical student-faculty ratio 1.5. This has changed little since 1968.

The medical student enrollment numbered 53,143 doing their thing 1974-75.

Once enscounced and accepted into medical school, now, the attrition rate for all classes, the past year was 1.31%. Some of us recall "the good old days", when attrition ratio in the first two years ran from 30-50%. Either students now are "smarter", or we were "dumber". Whatever the explanation—admissions to medical school is far more perilous than the "fall out" danger after entrance into medical school.

Since only one in three of the applicants to U.S. medical schools gain entrance, an increasing number of U.S. citizens go to foreign medical schools. The exact number is unknown. A foreign medical graduate has several hurdles. He may have fulfilled all requirements for licensure in the country of that school and passed the examination for foreign medical graduate (ECMFG), only to find there are now no residency positions open in the United States, and at least a year residency in a graduate training program in the U.S. is usually a prerequisite for state licensure. See Arizona Medicine February 1976 for further discussion of this problem.

The total number of foreign graduates serving as interns and residents decreased by 84 during 1974.

The Board of Family Practice certified 7,018 candidates during 1974, a net increase of 22% over the year before. This reflects the continuing increase in the number of physicians entering the field, 972 as of September 1, 1974 an increase of 354 or 57% over a year later.

The enormous cost of supporting medical

AM *Editor's Page*

EDITOR-IN-CHIEF
John W. Kennedy, M.D.*
ASSOCIATE EDITOR
William B. McGrath, M.D.*
EDITORIAL ASSISTANT
Joan Bruner

EXECUTIVE DIRECTOR AND MANAGING EDITOR
Bruce E. Robinson

EDITORIAL BOARD
Robert Barbee, M.D.
Marshall B. Block, M.D.
M. David Ben-Asher, M.D.
Andre J. Bruwer M.D.
Melvin L. Cohen, M.D.
Arthur V. Dudley, Jr., M.D.
Walter V. Edwards, Jr., M.D.*
C. Herbert Fredell, M.D.
Kenneth E. Johnson, M.D.
Gerold Kaplan, M.D.*
George Lastnick, M.D.*
Robert F. Lorenzen, M.D.
Darwin W. Neubauer, M.D.
Stanley H. Nordmo, M.D.*
David Pent, M.D.*
Donald A. Polson, M.D.
William F. Sheeley, M.D.
Michael L. Schreiber, M.D.*
Maurice L. Sievers, M.D.
Paul L. Singer, M.D.
Ernest Smith, M.D.
David C. H. Sun, M.D.*
Eleanor A. Waskow, M.D.
*Publishing Committee

schools is also reflected in the increasing state and federal support of private schools.

The cost of tuition continues to rise. Chicago Medical School has the highest $6,000, many state supported schools charge less than $1000 for residents; non-residents may be assessed double that amount.

There is also a change in curriculum with 96 of 114 medical schools reporting they are teaching family practice—two years ago only 49 schools so reported.

Physician assistant education programs have been slowly gaining accreditation by the American Medical Association.

Four types are recognized, orthopeadic, assistant to primary care, urologic physician's assistant and surgeons assistant. In these categories 4, 49, 1, 7 accredited training sites are operational—primary care assistants far out number the others.

Things are humming on the medical educational front, 107 U.S. schools have a student body of 53,000. They accept one in three applicants, but once accepted they graduate as M.D.'s 98+ percent.

Foreign graduates are finding fewer opportunities to do post-graduate work to qualify for state licensure. Tuition is increasing in all schools with a 4—$6,000 bracket not uncommon. Specialty training goes on full blast with more spaces in family practice programs.

Dean's Page

INTERVIEWING THE PATIENT



NEAL A. VANSELOW, M.D.

Every physician must be able to obtain an accurate and complete medical history from his patients. The traditional training of medical students in these skills has largely been accomplished by assigning them patients on the ward or in a clinic and requiring them to obtain a history. Upon completion, a written record of the history has been reviewed and evaluated by an instructor.

This traditional approach is inadequate in several important respects: 1) By reading students' histories it has been difficult to determine whether they had obtained all the relevant information from the patient unless the instructor had likewise interviewed the patient. 2) The students' interviewing and interpersonal skill could not be accurately assessed only by reading the written record since such judgement requires direct observation by the instructor. 3) Assignment of students to patients with different personalities and different verbal abilities has made objective evaluation of their performance difficult.

To overcome these obstacles, Dr. Paula Stillman of the Department of Pediatrics has developed an innovative approach for teaching and evaluating interviewing skills. This work is an extension of the pioneering efforts in this area by Dr. Ray Helfer at Michigan State University. Nonphysician mothers are taught to give a consistent and authentic history of a child's common medical problem. Each mother relates a unique history. These histories are rehearsed until each *trained mother* always provides the same information during an interview. After training is completed, a score sheet is developed for each mother's history listing the historical information that is available to the student. The trained mothers can then give the student a *content* score for each interview by comparing

the amount of information he obtained to the amount of information she was trained to give him.

The Arizona Clinical Interview Rating Scale (ACIR Scale) has been developed as a means of objectively evaluating the *process* of interviewing. The ACIR Scale lists 16 interviewing skills with poor, average and excellent performance in each area clearly defined. Each skill has a maximum score of five points and the sum of these ratings produces a *process* score. The trained mothers are taught to use this scale. Following is a sample item from the ACIR Scale:

The interviewer seeks specificity and verification of the mother's responses, e.g.:

5 Mother: "My child is allergic to penicillin." Interviewer: "How did you learn he is allergic? What kind of reaction has he had to penicillin in the past?"

4

3 The interviewer, at times will seek documentation of data, but not always.

2

1 The interviewer makes no attempt at verification, accepting information at face value.

The combination of a performance scale with clearly defined objectives and its application by trained mothers renders this a valid, reliable instrument for teaching as well as evaluating interviewing skills.

These teaching and evaluative techniques were first used with students in the class of 1976 during their clinical clerkship in pediatrics. The class was divided into experimental and control groups. The experimental group received a treatment interview and teaching session with a trained mother early in the clerkship while the control group received none. Near the end of the clerkship, students in both groups received an evaluative interview. The experimental group scored higher on the process of interviewing than the control group. This difference was statistically significant.

The following year the same protocol was used with the class of 1977 before they entered any of the clinical clerkships to determine the effect of teaching interviewing skills earlier in the medical school curriculum. Students in this experimental group performed better on both the content and process of interviewing than students in the control group. Again, the difference was statistically significant. This latter group of students is now being evaluated as they rotate through their pediatric clinical clerkship to determine whether differences between the experimental and control groups are maintained and whether interviewing skills taught prior to entry into the clinical clerkships are retained as students enter these clerkships.

These studies demonstrate that interviewing skills can be taught effectively and efficiently by well trained paramedical personnel, sparing physicians for other tasks. Once interviewing skills are clearly defined, trained mothers are able to provide a consistently uniform learning experience for students. They can verify that the skill is acquired to set level of competency and evaluate the students in a constructive and instructive way. Student response to this program has been very positive.

Neal A. Vanselow

Obstetrics and Gynecology

OBSTACLES IN OBSTETRICS — GYNECOLOGY

TOMMY EVANS, M.D.

For the last several years the in-coming president of the ACOG has been invited to address the members of the Phoenix Ob-Gyn Society at its January meeting. Although each of these men has been a renowned academician in his own right, the presentations have usually been devoted to a discussion of some of the current problems and trends in our specialty. To give wider dissemination to his remarks, the address of Dr. Tommy Evans is reprinted below.

Donald J. Ziehm, M.D.—Editor

Has there ever been a time in the history of medicine when physicians, who are usually highly esteemed by everybody, have been subjected to such a broad attack from so many sources? When I became an MD over 30 years ago it was a great thing to be a doctor. You were immediately launched into a position of honor, greatly respected just for being a physician. Well, that's not true anymore. Whereas our individual patients seem to hold a high opinion of us, we still have a very serious problem. As a consequence of this broad attack, how do we react? None of us is very comfortable with a political position. Our reactions are usually not very appropriate in the unfamiliar environment of lawyers and politicians. We are not alone in being the subject of this onslaught. Never before in the history of this country has higher education been more poorly regarded. So therefore each of us, because we are considered as a priveleged group (in the 99th percentile in the nation for education), will be underrated.

How do we react to this kind of criticism? We all became doctors basically because of a high level of dedication to an objective of helping people. But are all physicians outstanding people just because they are MDs. Unfortunately that's not true. Do we as individuals defend a person just because he is a physician? Honesty demands that we answer yes.

A major problem today is a lack of credibility with the public. Who are we to make judgements about life and death and not be held responsible for those judgements. As a consequence of today's climate of practice a reappraisal is necessary. our mistakes are going to be matter of public exposure to a degree never seen before. Is this good or bad? Will this change our philosophies, our behavior, our professional input? These may be altered to a great degree. Many of us are very uncomfortable with the concept of recertification. But it must be instituted. Presently this can still be developed by our own personnel, without outside interference. Lawyers also suffer a credibility gap. They have also become targets. Interestingly, in California this past year, recertification examinations were given to lawyers. The important area of identification of credibility and responsibility to the public demands our immediate involvement and participation. The support of the majority of ACOG members is necessary in establishing credibility with the public—our patients. Hopefully, recertification performed in a helpful, effective way will promote continuing education. Can anyone who has gone several years without going to a postgraduate course, attending a medical meeting, going to staff conference, or reading a journal fail to realize that an educational defect exists which is difficult to close. No one can practice in a vacuum. The recertification examination should not be threatening to us. A critical mass of information has accumulated. The ACOG is now developing a syllabus which will contain the scope of information necessary today. Each of us practices differently. However, the characteristics of each individual practice can be identified. Professional profiles are being established. Should someone practicing gynecology alone be required to intrepret a complex fetal heart tracing? By careful attention to the practice profiles a recertification procedure can be developed to assist in reaching our goal—credibility with the public and our own profession.

We've almost priced ourselves out of existence. The cost of training a new physician (about $20,000 per year at Wayne State) is impressive. If the medical student would be required to finance his entire education without assistance, far fewer physicians would be produced. After completing specialty training, what then? We become very expensive people when we practice our professions. Malpractice premiums alone are difficult to pay. As you know, some physicians have actually added a notation at the bottom of their statements indicating what portion of the charge is for malpractice insurance. Expensive—yes, but the last bastion of individuality in this country, professionally, is the physician. The medical care dollar is envied by many sectors; the competition is keen. In Michigan, the greatest discontent between physicians, lawyers, and the public related to identifying what happened to the medical care dollar. A medicolegal settlement in Michigan results in 58% of the award going to lawyers (plaintiff and defense), 20% to the insurance company, and only 20-22% to the patient with a justifiable suit. No longer can we disassociate ourselves or disavow any personal resonsibility in this arena of action. As a result of an expensive medical education, exorbitant malpractice premiums, and the enormous cost of maintaining an office, we're being priced out of business—and it's not by us. But remember this. Before socialization of any country occurs the first group to be attacked are the physicians. This has been attempted repeatedly. We can

accept this subjugation or resist it, but under no circumstances can we disassociate ourselves from the struggle. It appears that medicine has become target practice for the press. An honest, hard working doctor is not newsworthy, rarely earning a line or two of newsprint. But let anyone fall by the wayside—and many in medicine, as in any other profession, do this—the front page screams his errancy. Perhaps by direct confrontation of our problems and involvement in the political arena a reversal of the current trend can be accomplished. Isn't the autonomous and self-determined practice of medicine worth fighting for?

With all of the current problems, what would attract a young physician into Obstetrics and Gynecology? Our discipline literally holds the future of this planet in its hands. As you know, our record in terms of human reproduction is less than enviable. The United States alone has over 6 million mentally retarded people, and many of these tragedies can be traced to prenatal events. Prospective studies have identified a 7% incidence of congenital defects (major and minor). The collective performance of Obstetricians can have a profound impact on the quality of life on earth. That possibility should stimulate us to resist anyone who subjects us to assault. Are young people discouraged about going into medicine? I don't think so. During the last 3-4 years, Obstetrics and Gynecology has become among the most popular areas of training for our medical students. By 1980 the specialty will probably plateau in terms of needs. Our future is stimulating—many battles may be necessary to protect it. No longer can we be indifferent to political activism or totally individualistic in our thinking. Our greatest strength lies in working together.

Clinical Oncology In Arizona

ESTROGEN RECEPTORS: MARKERS OF HORMONAL DEPENDENCE OF BREAST CANCER

TERENCE S. HERMAN, M.D.

Editors: Sydney E. Salmon, M.D., Professor and Head, Section of Hematology and Oncology, University of Arizona College of Medicine, Tucson, Arizona 85724; Robert H. Thoeny, M.D., Dir., Radiation Oncology, Good Samaritan Hospital, Phoenix, Arizona 85006; Darwin W. Neubauer, M.D., General Surgeon, 720 Country Club Road, Tucson, 85716.

Growth of normal human breast tissue is affected by many hormones. Among these, estrogen, prolactin, and progesterone seem most important, while corticosteroids, thyroid hormones, insulin, and growth hormones play supportive or permissive roles.[1] It is known that many cancers of the human breast remain responsive in varying degrees to manipulations of the hormonal milieu. [2]

Modification of the hormonal environment of mammary tumors has been used as a means of palliative therapy for over 75 years[3] and has often proved effective. Ablative endocrine procedures have included oophorectomy, adrenalectomy, hypophysectomy, and recently, administration of anti-estrogens. Additive endocrine therapy has included estrogen, androgen, progesterone, corticosteroid, and thyroid hormone administration. In unselected patients with breast cancer, only about one third will respond to hormonal manipulation. Use of such variables as age and menopausal status, disease-free interval, site of metastasis, and response to previous endocrine therapy to select patients who will respond

From: Sect. of Hematology & Oncology, Univ. of Arizona College of Medicine, Tucson, AZ 85724

improves the response rate to only about 50%.[4] At best, the 50% who will not respond will undergo ineffective additive endocrine therapy for 3-6 months; at worst, these patients may be exposed to a flare of disease or to needless surgical morbidity and mortality. Hypophysectomies and adrenalectomies are major surgical procedures and both have a mortality rate of about 14%.[5]

In 1959, observations in goats, sheep, and rats revealed that tritium-labeled estrogen was concentrated in target tissues, especially the breast.[6,7] These findings led Folca et al to inject tritiated hexoestrial into human subjects with advanced breast cancer prior to adrenalectomy. He found that patients having metastases which concentrated the labeled estrogen had a much greater chance of responding to adrenalectomy than patients with metastases which failed to concentrate estrogen.[8] Subsequently, others tried to correlate *in vitro* uptake of labeled estrogen into tissue slices from breast cancer with subsequent response to endocrine manipulation, but methodologic difficulties prevented a strong association from emerging.[9] In the early 1960's, however, experiments in rat and calf uterine tissues showed that a very high affinity estrogen binding protein was present only in the cytoplasm of cells of estrogen target tissues and that this protein was capable of transporting estrogen to the cell nucleus where its effects were manifest.[10] Subsequently, the presence of this receptor protein was detected in the cells of chemically induced rat mammary cancer.[11,12]

McGuire and co-workers at the University of Texas at San Antonio have written extensively on estrogen receptors. In their early studies, they used dimethylbenzanthracene (DMBA) induced rat mammary tumors which may be spontaneously sensitive or insensitive to estrogen ablation. These investigators demonstrated estrogen receptors in a cell-free preparation of cytoplasmic proteins (cytosol) from tumors which were responsive to oophorectomy. They incubated the cytosol fraction with tritiated estradiol and chromatographed the labeled mixture. Most of the labeled estrogen was found in macromolecular fractions.[13] There were two peaks of radioactivity on ultracentrifugation: one at 8S and the other at 4S. It was later found that the 8S peak contains the specific receptor-binding protein for estrogen.[14] These investigators later modified their method so that the number of estrogen binding sites per milligram of cytosol protein could be calculated.[15]

Over the last few years, quantitative analysis for estrogen receptors has been extended to specimens of human breast cancer obtained at surgery for primary or metastatic lesions. Very significant associations between the presence or absence of estrogen receptors and subsequent response to hormonal therapy have emerged, primarily as a result of a recent large collaborative effort sponsored by the Breast Cancer Task Force of the National Cancer Institute.[16] After reviewing 531 treatment trials in 453 patients using rigid criteria for response, the following conclusions were reached:

1. The presence of estrogen receptors significantly improved prediction of response to endocrine ablation. Of 33% positive treatments in 211 trials of ablative endocrine therapy, only 8% occurred in estrogen-receptor-negative patients, while 55% occurred in estrogen-receptor-positive patients. Thirty percent of patients with borderline estrogen receptor values also responded.
2. The presence of estrogen receptors significantly improved prediction of response to additive endocrine therapy. Of 34% positive treatments in 170 trials of additive endocrine therapy, only 7% occurred in estrogen-receptor-negative patients, while 60% occurred in estrogen-receptor-positive patients.
3. Tumors from postmenopausal patients contained higher estrogen receptor activity than tumors from premenopausal patients. This was thought to be due to the lower levels of endogenous estrogen levels in postmenopausal patients, since endogenous estrogen competes with labeled estrogen in the test system.
4. Although the presence of receptors was not correlated with histologic type of tumor, there was a trend which suggested that the more anaplastic the tumor, the less likely the tumor cells were to retain estrogen receptors.
5. There is no correlation between stage of the tumor and presence of estrogen receptors.
6. As the sensitivity of the assay systems has increased, the percentage of patients having estrogen-receptor-positive tumors has risen from 55% to 70%-85% over the last few years.
7. Disease-free interval after mastectomy does not predict presence of estrogen receptors.
8. The absolute level of estrogen receptors does not correlate directly with either chance of response or duration of response. Once the receptor assay was definitely positive, very high absolute values did not improve either the chance of response or its duration.

9. Metastatic and primary cancer tissues are equally predictive when subjected to estrogen receptor analysis. In this regard, in a large European study in which estrogen receptors were assayed in primary tumors and lymph nodes from 23 cases, samples reacted similarly in all cases but one.[17]

The question of why only 50%-60% of estrogen-receptor-positive patients benefit from endocrine therapy still remains, however. McGuire makes the point that although the presence of estrogen receptors may serve as a marker of probable hormone responsiveness, the receptors cannot be the only factor in response, since it is likely that the actions of prolactin are more important than estrogen levels to the growth of mammary cancer.[9] Moreover, the presence of the estrogen receptors does not guarantee that the entire endocrine apparatus of the cell is intact. A recent preliminary report may further clarify this problem. McGuire and his group have developed an assay for progesterone receptors. Since it is known that the production of progesterone receptors is an end result of estrogen action,[18] it was reasoned that the presence of progesterone receptors might indicate that the entire hormonal apparatus of the tumor cells was still functioning. Nine of nine patients who were both estrogen-receptor-positive *and* progesterone-receptor-positive responded to endocrine therapy.[19]

In summary, the presence of estrogen receptors improves a patient's chance of response to endocrine manipulation to 50%-60%. In the absence of these receptors, response is so unlikely that it is doubtful that endocrine manipulation should be tried. Tests of estrogen receptors are now becoming more generally available and the methodology is being standardized in the clinical laboratories at the University of Arizona. Such tests are also available at some referral laboratories in California. In my opinion, these tests are of value, and it is appropriate to test for estrogen receptors in primary lesions resected at the time of mastectomy, even though the patient may not be a candidate for hormonal manipulation at that time. (Indeed, for patients with lymph node involvement, postoperative cytotoxic chemotherapy appears often warranted.) Nonetheless, subsequent need for hormonal manipulation may arise, and the primary is the easiest site from which to obtain tissue for testing.

As other markers of hormone sensitivity are developed it is highly likely that assay systems will eventually be able to predict responsiveness to endocrine therapy in nearly 100% of human breast cancers.

REFERENCES

1. Lloyd C. Control of mammary growth and lactation. In Endocrinology (Williams RH, ed). Philadelphia, WB Saunders Co, 1968 (4th ed).
2. Stoll B. The basis of endocrine therapy. In Endocrine Therapy of Malignant Disease. Philadelphia, WB Saunders Co, 1972.
3. Beatson G. On the treatment of inoperable cases of carcinoma of the mammary. Suggestions for a new method of treatment, with illustrative cases. Lancet 2:104, 162, 1896.
4. Stoll B. Hormonal Management in Breast Cancer. London, Pitman Medical, and Philadelphia, JB Lippincott Co, 1969.
5. Adrenalectomy and hypophysectomy in disseminated mammary carcinoma. A preliminary statement by the Joint Committee on Endocrine Ablative Procedures in Disseminated Mammary Carcinoma. JAMA 175:787, 1961.
6. Glascock RF, Hoekstra WG. Selective accumulation of tritium-labeled hexoestrol by the reproductive organs of immature female goats and sheep. Biochem J 72:673, 1959.
7. Jensen EV, Jacobson HI. Fate of steroid estrogens in target tissues. In Biological Activities of Steroids in Relation to Cancer (Pincus G, and Vollmer EP, eds). New York, Academic Press, 1960, p 191.
8. Folca PJ, Glascock RF, Irwin WT. Studies with tritium-labelled hexoestrol in advanced breast cancer. Lancet 2:796, 1961.
9. McGuire WL, Chamness GE, Costlow ME, Shepherd RE. Hormone dependence in breast cancer. Metabolism 23:75, 1974.
10. Jensen EV, DeSombre ER. Mechanism of action of the female sex hormones. Ann Rev Biochem 41:203, 1972.
11. King RJB, Gowan DM, Inman DR. The uptake of (6, 7-^{3}H)oestradiol by dimethylbenzanthracene-induced rat mammary tumours. J Endocrinol 32:83, 1965.
12. Jensen EV, DeSombre ER, Jungblut PW. Estrogen receptors in hormone responsive tissues and tumors. In Endogenous Factors Influencing Host-Tumor Balance (Wissler RW, Dao TL, Woods S, Jr, eds). Chicago, University of Chicago Press, 1967.
13. McGuire WL, Julian JA. Comparison of macromolecular binding of estradiol in hormone-dependent and hormone-independent rat mammary carcinoma. Cancer Res 31:1440, 1971.
14. Chamness GE, McGuire WL. Estrogen receptor in the rat uterus. Physiological forms and artifacts. Biochemistry 11:2466, 1972.
15. McGuire W. Estrogen receptors in human breast cancer. J Clin Invest 52:73, 1973.
16. McGuire W. Endocrine therapy of breast cancer. Ann Rev Med, 1975, p 353.
17. Leclercq G, Heuson JC, Deboel M, Mattheiem WH. Oestrogen receptors in breast cancer: a changing concept. Br J Med 25:185, 1975.
18. Freifeld ML, Feil PD, Bardin CW. Effect of estrogen on production of progesterone receptors. Steroids 23:93, 1974.
19. Horwitz KB, McGuire WL. Predicting response to endocrine therapy in human breast cancer: a hypothesis. Science 189:726, 1975.

Seminars in Endocrinology and Metabolism

MEDICATIONS: GOOD VS. BAD

MARSHALL B. BLOCK, M.D.

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of nw knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews whould enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

Medical therapists are constantly faced with the problem of determining the advantages and disadvantages of all forms of treatment. As outlined in last month' Seminar in Endocrinology and Metabolism, irradiation to the head and neck region was once thought to be a treatment of choice for various conditions but has recently been found to produce an increased incidence of thyroid gland abnormalities including cancer. Today we continue to use therapy which has significant side effects with the understanding that the benefits which accrue from their use outweigh their disadvantages. It recently has become apparent that medicines which we had been using for many years and were thought to be relatively "safe" have now been found to have more significant side effects than were earlier appreciated. This has created additional problems for the practicing physician in light of the present medicolegal climate. Because of some recent disturbing findings in reference to the use of various types of hormones and related medications in medical practice, attention to their significant side effects is important and will be discussed in the following paragraphs.

Reprint requests to: 3411 North Fifth Avenue, Phoenix, Arizona 58013.

As discussed in these columns last year (April, 1975, *Arizona Medicine*, page 344), the treatment of diabetes mellitus with oral hypoglycemic agents has fallen into much controversy. The full details were presented in the above-mentioned article and no really new developments have accrued since that time to change the basic problem that we are faced with in their utilization. There are still basically two groups, one advocating and the other disavowing the use of these agents in the treatment of diabetes mellitus. A recent editorial in one of the major medical journals strongly attacked the use of these agents while an opposing group at the Joslin Clinic and elsewhere seem to feel that the final answer is not yet in concerning these drugs. As will be pointed out below in a discussion of the use of medroxyprogesterone acetate (Provera), it unfortunately is not necessary to have all the facts to draw a medicolegal decision. Therefore, it is still *my* feeling that the possible risks outweigh the benefits of these agents. Until a final answer is in, they best be avoided in the management of patients with diabetes mellitus.

Recent controversy concerning the use of medroxyprogesterone acetate (Provera) and the relationship between it and congenital upper limb defects in pregnant women has arisen.[1] In addition, increased risk of gallbladder disease in patients treated with oral contraceptives containing progesterone and estrogen compounds and increased risks of cardiovascular disease with these agents and the development of possible liver abnormalities has also been reported.[2] A higher risk of uterine endometrial carcinoma in

patients treated with conjugated estrogens has also been noted.[2] Certainly the hormone birth control compounds are important agents in population control, but their significant side effects must be brought to the attention of the patient who is deciding upon the method of birth control to employ. Likewise the use of Provera for determining whether pregnancy is present or not in light of the recent articles alleging an association between congenital upper limb abnormalities and the administration of these hormones raises a question about whether alternative methods of pregnancy determination should be utilized. A valuable discourse concerning these rather important medicolegal points was presented in the correspondence section, "Questions and Answers" in the *Journal of the American Medical Association*, (234, 5 :536). In response to a letter by a physician in Texas asking whether the use of Provera should be continued in face of the above noted congenital defect association, three responses were obtained. One was from Dr. Franz Ingelfinger, who is Editor of the *New England Journal of Medicine*. His response was that "epidemiological data cast doubt on the usefulness and safety of a procedure that in the experience of a single physician may appear satisfactory. Though the physician may be spared anxiety if he were kept ignorant of such data, few would want to practice uninformed medicine." Dr. Ingelfinger continued that "when two alternative therapies of approximately equal efficacy are available, the prudent physician chooses the one with the lesser risk. When only one method is available and required, the well-informed physician employs that, confident in his knowledge that the benefit outweighs the risks." Dr. Daniel R. Mishell, Jr., M.D., of the University of Southern California School of Medicine, an obstetrician and gynecologist, concluded on the basis of the study that "although the deficiencies of the above noted study are acknowledged, it may be several years before the results of more definitive prospective studies are acknowledged, it may be several years before the results of more definitive prospective studies are available. Until such time, synthetic progestogens, i.e., Provera, should not be administered to induce withdrawal bleeding, unless a sensitive test for pregnancy is negative. Since endogenous progesterone production is increasing as this stage of gestation, it is unlikely that intramuscular administration of 100 mg. of crystalline progesterone in oil to induce withdrawal bleeding will be harmful to the fetus. The nature hormone is as effective as synthetic progestogens for induction of withdrawal bleeding and should be used in their stead." The third respondent was a physician-attorney. His comments are important and deal not only with the issue concerning Provera, but also with the use of the oral hypoglycemic agents. "I certainly agree with the medicolegal concern you express. All physicians must remember that less than adequate scientific proof may yet be sufficient for a courtroom decision. Therefore, the type of investigative literature presently available, as in this instance, should constitute a warning against the use of sex hormones for pregnancy testing, particularly since other, quite adequate, methods of testing for pregnancy are available."

". . . Until someone disproves this causal inference, the continued use of such hormones for pregnancy testing constitutes a substantial medicolegal hazard for prescribers."

I think the latter statement certainly puts into perspective a problem that as physicians we must face. What constitutes scientific proof is not that which determines medicolegal guilt. The fact that there is any evidence that there may be such an association creates doubt and this should be a warning to the physician that the therapy may be harmful to the patient. Overriding such a warning should be done with caution.

REFERENCES

1. *N. Eng. J. Med.*, 299:697, 1974.
2. *Lancet*, 1:941, 1973.
3. *N. Eng. J. Med.*, 294:219, 1976.

Radiology
Case of the Month

CASE NUMBER 8

IRWIN M. FREUNDLICH, M.D.



Figure 1



Figure 2



Figure 3

THIS PATIENT IS A 59YO BLACK MALE WITHOUT SYMPTOMS.

CALCIFIED LUETIC ANEURYSM OF A SINUS OF VALSALVA AND ASCENDING AORTA

Atherosclerosis is by far the most common cause of aortic calcification with luetic aortitis in second place but much less common. Infrequent causes are cystic medial necrosis and Takayasu's giant cell aortitis. Other rare entities with aortic calcification include multiple calcified aneurysms in coartation of the aorta,[1] generalized arterial calcification of infancy probably secondary to a connective tissue disorder,[2] and a calcified thrombus lodged in the aortic isthmus.[3] Diabetis mellitus affects atherosclerotic calcification, hastening its occurrence by several years and increasing both the amount of calcium laid down and the extent to which the aorta is calcified.

Luetic aortitis is a disease of the media not the intima and predominantly involves the ascending aorta. The sinuses of Valsalva, the aortic valve and coronary ostia may also be affected. Jackson and Lubert[4] in 1945 were the first to note the relationship between radiologic evidence of calcium in the ascending aorta and luetic aortitis. Leighton[4] in 1948 and Wolkin[5] in 1954 both found that better than 50% of the patients with clinical aortitis had calcification of the ascending aorta. Heggtveit[6] studied 100 cases of syphillitic aortitis of which 21 demonstrated calcification. He noted four levels of involvement; uncomplicated luetic aortitis (36%), luetic aortic aneurysms (51%), luetic aortic valvulitis with insufficiency (29%) and luetic coronary osteostenosis (18%).

While atherosclerotic calcification of the aorta not infrequently involves the aortic annulus, it is much more common in the distal arch and descending aorta than in the ascending portion. Calcification of the ascending portion of the atherosclerotic aorta does occur but it is uncommonly seen on a chest roentgenogram.[7] Luetic aortitis, on the other hand, predominates in the ascending aorta and as a general rule, if there is calcification in the ascending portion only or if the ascending portion predominates, the calcium has a luetic origin (Figures). Heavy calcification of the descending thoracic aorta extending into the abdominal aorta is on the other hand typical of the atherosclerotic process. Both luetic and atherosclerotic calcification are found in older patients, while calcification secondary to cystic medial necrosis or giant cell aortitis is usually noted in younger individuals. These latter two diseases can be separated radiographically from each other by the presence of aortic dilatation in cystic medial necrosis, with or without calcification, and the absence of dilatation in Takayasu's aortitis.

Luetic aneurysms occur in the ascending aorta or in one of the sinuses of Valsalva. They often obtain a very large size prior to rupture (a case reported by Harris[8] measured 8 x 9 x 11 cm), usually are located in an extracardiac position and commonly show calcium in the wall.[9] The calcific density in a sinus of Valsalva aneurysm is circular or curvilinear in shape at the base of the heart. Calcium is usually deposited in the degenerated media of the aneurysm wall or about a thrombus within the root of the aorta.

From: Arizona Medical Center, Dept. of Radiology, Tucson, AZ 85724

REFERENCES

1. Stern, W.Z., Richardson, J.O. and Wolfe, R.: Multiple Calcified aneurysms in Coarcatation of the Aorta. RADIOLOGY 96, 331, 1970.
2. Parker, R.J., Smith, E.H. and Stoneman, M.E.R.: Generalized Arterial Calcification of Infancy. CLIN RAD 22, 69, 1971.
3. Taguchi, J.: Obstructing Calcified Thrombus of the Aortic Isthums: Diagnostic Roentgenological Appearance, AM J CARDIOL 12, 567, 1963.
4. Leighton, R.S.: Calcification of the Ascending Aorta as a sign of Syphilitic Aortitis, RADIOLOGY 51, 257, 1948.
5. Wolkin, A.: The Significance of Calcification in the Ascending Portion of the Aortic Arch. RADIOLOGY 62, 101, 1954.
6. Heggtveit, H.A.: Syphilitic Aortitis. CIRC 39, 346, 1964.
7. Elkeles, A.: Calcification of the Ascending Aorta. BR J RADIOL 31, 420, 1958.
8. Harris, E.J.: Aneurysms of the Sinus of Valsalva. AM J ROENTGENOL 76, 767, 1950.
9. Steinberg, I.: Roentgenology of Patent Ductus Arteriosus. AM J CARDIOL, 13, 698, 1964.

Seminars in Chest Medicine

PEDIATRIC PULMONARY ILLNESSES — EXTENT, CONCERNS AND HOPES

LYNN M. TAUSSIG, M.D.

This continuing series of articles entitled "Seminars in Chest Medicine" will attempt to keep the reader abreast of developments in the broad field of pulmonary diseases. The format used will be that of brief succinct reviews written by the editors as well as guest contributors. Areas of controversy as well as practical chest medicine will be explored. We hope that these reviews will be of value in promoting continuing education for certification examinations as well as a forum for new and controversial issues. The editors welcome comments and discussion from our readers.

ROBERT J. CLARK, M.D.
LYNN M. TAUSSIG, M.D.
WILLIAM C. WEESE, M.D.

Deaths due to respiratory illnesses are now nearly seven times less common for the entire population when compared to statistics from 1900 and three times less common for infants than in 1964.[1] However, respiratory illnesses still remain the most common cause of morbidity and a leading cause of death in infants and young children.[2] The prevalence figures as well as the socioeconomic impact of these illnesses are indeed staggering. (Upper respiratory tract infections — "common colds" — and neonatal pulmonary disorders are excluded, for the most part, from the following considerations. Emphasis will be placed on lower respiratory tract illnesses (LRI) which includes influenza, pneumonia, bronchiolitis, laryngotracheo-bronchitis and bronchitis.)

Acute LRI

It is estimated[2] that there are from 50 to 135 cases of acute LRI per 1000 children per year. About one of four infants requires medical attention each year for a LRI; 1-2% of infants develop bronchiolitis; 3-4% laryngotracheobronchitis (non-epiglottic "croup"); and 1% pneumonia.[3] These figures probably underestimate the true incidence for each disease entity.

From: Division of Respiratory Sciences and Department of Pediatrics, University of Arizona, Tucson, Arizona

TABLE 1

Deaths per 100,000 population Due to Respiratory Diseases in Arizona for Patients Over One Month and Under 19 Years of Age (1970-1974)*

	1970	1971	1972	1973	1974
Pneumonia	10.9	6.5	7.9	4.5	2.7
Other	2.4	4.9	2.2	2.5	3.3
Total	13.3	11.4	10.1	7.0	6.0

*Includes whites, Indians and other races (Data compiled by Mr. Lester Foote, Bureau of Management Information Systems, Arizona Department of Health Services).

Mortality figures for these acute LRIs are also high. In 1969, pneumonia and influenza were the leading causes of death in the age group 1 month to 1 year and accounted for 28% of deaths. From 1 to 14 years of age, these illnesses were the 6th most common cause of death. A total of about 9,000 children die in the U.S. per year from respiratory illnesses such as pneumonia, influenza, and bronchiolitis.[2] Furthermore, there is no indication that, nationwide, these figures have decreased appreciably over the last few years. Arizona statistics are more encouraging. In 1966, 136 children died of respiratory illnesses in Arizona (this excludes neonatal deaths). In 1974, in the same age group, only 48 deaths due to respirory illnesses were reported (Table 1). However, mortality figures are probably also underestimates.

Most of these LRI are caused by viruses and the permanent sequelae from such pulmonary infections are currently unknown. A small percentage of patients subsequently develop bronchiectasis. A far more important consideration is the possible relationship of acute LRI in infancy and young childhood to the development of chronic lung disease in later life. Although such a relationship is known for some cases of viral LRI, air pollution, alpha-1-antitrypsin deficiency and immune deficiency states, the full extent of such possible associations is currently under active investigation.[4] Do many cases of adult chronic bronchitis and emphysema have their origins in childhood? While the answer to this question is currently unknown, recent data from the Tucson Epidemiology Study of lung disorders (as part of a NIH-SCOR grant) have shown that of nearly 700

TABLE 2

Estimated Frequencies of Chronic Respiratory Illnesses in Infants and Children (derived from 1968 and 1970 National Health Survey statistics)

Category	Estimated Number	% of all Children Under 17 Years	% of all Children Under 17 Years with Chronic Illness	% of Children with Chronic Respiratory Illnesses
All children with chronic illness	15,600,000	23	100	—
Children with any form of chronic respiratory illness	10,345,000	15	66	100
Asthma	2,040,000	3	13	20
Chronic bronchitis	2,592,000	4	17	25
Sinusitis	1,900,000	3	12	18
Hay fever (without asthma)	2,300,000	3	15	22

children under the age of 15 years, 8.0% give a history of chronic cough, 4.8% a history of persistent phlegm, 19.4% a history of any kind of chest problem, and 8.7% and 8.8% give a history of physician-confirmed chronic bronchitis and asthma, respectively.[5] A total of 19.3% had physician-confirmed asthma or bronchitis. Admittedly, these figures are higher than the national statistics for similar illnesses (probably reflecting, in part, the in-migration of families to Tucson) but they do highlight the extent of chronic lung problems in children and the possible relationship to adult respriatory disorders.

Chronic Respiratory Illnesses In Children

Nationally, 10,300,000 children under 17 years of age have chronic lung diseases, accounting for nearly 70% of all infants and children with any form of chronic disease. Approximately 30-120 per 1000 children have asthma (a total of about 2,040,000 children); about 10,000-12,000 children have cystic fibrosis (one in every 2,000 live white births is a child with cystic fibrosis); 2.3 million children have hay fever without asthma; 1.9 million have chronic sinusitis; and 2.6 million have the diagnosis of chronic bronchitis (Table 2).

The socioeconomic impact of these acute and chronic respiratory illnesses appears to be tremendous. A rough estimate, based on limited surveys in hospitals in two urban cities, is that approximately 50% of all outpatient visits are for illnesses related to the respiratory system (including "colds") and that about 25% of all admissions to pediatric beds are for primary or secondary respiratory illnesses. While a major portion of outpatient visits are undoubtedly for acute upper respiratory tract infections, it is unlikely that these illnesses account for a large percentage of pediatric hospital admissions. In 1970, asthmatics were hospitalized for 9,340,000 days; children with asthma and chronic bronchitis had 20 million days of non-hospital disability and 43.3 million days when they were unable to engage in their usual activities.[6,7]

Hopes

It is obvious from these statistics that in the immediate future more and better health-care delivery as well as research efforts must be directed towards the area of respiratory illnesses in childhood. It is estimated that the U.S. currently has only 25% of the needed pediatric pulmonologists to care for the infant or child seriously or chronically ill with a respiratory illness.[2] In addition to training additional pediatric pulmonologists, regional pediatric intensive care units need to be developed with appropriate transport programs to care for infants and children with serious respiratory problems. Additional education of both the general medical and lay public is necessary in order to ensure proper care and appropriate referrals.

Immediate research is required to:

1. Learn how infectious agents produce disease and how the body defends against such agents (host-defense mechanisms).
2. Study the relationship of childhood lung diseases to chronic pulmonary disorders in later life. The entity of "chronic bronchitis" in childhood needs to be defined so that predisposing factors can be assessed, early diagnosis made, prompt therapy initiated and prognosis (especially with respect to adult COPD) determined.
3. Evaluate the roles of environment factors (air pollution, smoking, etc.) in producing acute and chronic respiratory illnesses in infants, children, and adults.
4. Develop and test vaccines which hopefully will be protective against certain viruses, bacteria and Mycoplasma pneumoniae.
5. Develop less toxic anti-viral agents.
6. Develop better prophylactic and therapeutic agents for the care of the asthmatic child.
7. Discover the cause of cystic fibrosis so that the manifestations of this disease can be prevented or better treated.

The needs in the area of pediatric pulmonary disease are obvious. What is less obvious is whether the government and the public recognize the medical and economic impact and implications of pediatric lung diseases and whether they are willing to support the needed care and research efforts in this area.

REFERENCES

1. Wegman, M.E.: Annual Summary of Vital Statistics —1974, Pediatrics, 56:960, 1975.
2. Task Force Report on Major Pediatric Pulmonary Diseases and Manpower Need, Scientific Assembly of Pediatrics, American Thoracic Society, New York, 1975.
3. Williams, H.E. and Phelan, P.D.: Respiratory Illness in Childhood, Blackwell Scientific Publications, London, 1975.
4. Strieder, D.J.: Pediatric Origins of Chronic Obstructive Lung Disease, Bull. de Physiol.—Path. Resp. 10:273, 1974.
5. Lebowitz, M.D.; Knudson, R.J. and Burrows, B.: Tucson Epidemiologic Study of Obstructive Lung Diseases. I. Methodology and Prevalence of Disease, Amer. J. Epidem. 102:137, 1975.
6. National Health Survey, Series 10, No's 44, 45, 47, Dept. of HEW, March 1968.
7. Dr. G. Rosenberg—personal communication.

Department of Health Services

LOCAL ALCOHOLIC RECEPTION CENTERS



SUZANNE DANDOY, M.D.
ACTING DIRECTOR

From the point of view of both cost to the public and hope for the individual public intoxicant, establishment in Arizona of Local Alcoholism Reception Centers (LARCs) has proven beneficial.

The legislation decriminalizing simple public drunkenness became effective January 1, 1974, and was, in part, intended to halt the "revolving door" experience in dealing with the public intoxicant.

In the "revolving door" process, the public drunk was arrested, jailed, tried, fined and released; whereupon he again became drunk, was arrested, and so on. This process, which was solely in the realm of the criminal justice system, was built upon the theory that the public inebriate would be sufficiently intimidated by the process to stop drinking. Obviously, this was not the case.

With the 1974 legislation, responsibility for the pubic intoxicant was shifted from the criminal justice process to the health care system. Soon LARCs were established throughout the state to provide an alternative to jail. The LARCs, in providing short-term emergency care to detoxify the alcoholic, were planned to further serve as an entry point into the continuum of alcoholism treatment services.

Public drunks are brought to the LARC detoxification center by police, are referred there by individual physicians or agencies, or voluntarily come in for treatment. Whatever their method of arrival, each is treated as a patient, rather than as a prisoner. Personal histories are obtained, and the immediate mental and physical needs of the clients are attended. Each is given food, a place to bathe and sleep, and preliminary counseling. When the patient is detoxified, he is referred to another agency for follow-up counseling and care.

With the LARC concept came the possibility that the "revolving door" experience might be completely halted, at a cost far below that of treating the public drunk as a criminal.

A pilot study in 1973 compared the cost of processing a public intoxicant through the criminal justice system as against that of care through LARCs. The study revealed that an average cost for the first day of containment in the criminal process was $40.50, while processing through the LARC system was $11.63. Certainly costs in both areas have risen, but the comparative diffentiation can be expected to remain about the same.

For the current fiscal year, the State Legislature appropriated $1,700,000 for grants to local community agencies for total alcoholism services. Of this, amount $1,246,200 is contracted to agencies for the 20 LARCs around the state. This money is matched, dollar for dollar (cash or in-kind), by the local agency.

Presently, the average cost per client day for all LARCs in the state (based on first quarter data for the current fiscal year) is $32. With the establishment of LARCs, the recidivism rate has dropped from over 90 percent under the old criminal justice system to 63 percent.

To be sure, there are problems with LARCs. Most of these problems, however, could be solved if LARCs were truly integrated into a total system of care for the alcoholic. The utilization of a total system of care, which would address the total alcoholic population—not just the three to seven percent of that population called "public inebriates"—could be expected to reduce that recidivism rate even more dramatically.



APRIL 27 — MAY 1, 1976
SAFARI HOTEL, SCOTTSDALE, ARIZONA

Approved for fourteen and one-half hours required credit for ArMA Certificate in Continuing Medical Education and fourteen and one-half hours elective credit by the American Academy of Family Practice.

BOARD OF DIRECTORS



WILLIAM C. SCOTT, M.D.
President



EDWARD SATTENSPIEL, M.D.
President-Elect



JOHN F. KAHLE, M.D.
Vice President



WILLIAM E. CRISP, M.D.
Secretary



RICHARD L. DEXTER, M.D.
Treasurer



WILLIAM G. PAYNE, M.D.
Past President



ROBERT A. PRICE, M.D.
Speaker



JOHN W. KENNEDY, M.D.
Editor-in-Chief



SEYMOUR I. SHAPIRO, M.D.
Delegate to AMA



RICHARD O. FLYNN, M.D.
Delegate to AMA



W. SCOTT CHISHOLM, JR., M.D.
Delegate to AMA



BRUCE N. CURTIS, M.D.
Alternate Delegate to AMA



ARTHUR V. DUDLEY, JR., M.D.
Alternate Delegate to AMA



PATRICK P. MORACA, M.D.
Alternate Delegate to AMA



DANIEL T. CLOUD, M.D.
AMA Trustee



GINALD J. M. ZELUFF, M.D.
Central



GEORGE L HOFFMANN, M.D.
Central



JAMES M. HURLEY, M.D.
Central



WALLACE A REED, M.D.
Central



AWRENCE J. SHAPIRO, M.D.
Central



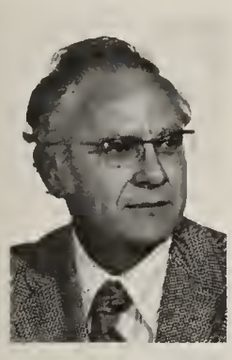
JACK I. MOWREY, M.D.
Northeastern



RICHARD T. MCDONALD, M.D.
Northwestern



EDWARD R. CURTIS, M.D.
Southeastern



CHARD S. ARMSTRONG, M.D.
Southern



HENRY P. LIMBACHER, M.D.
Southern



VERNOR F. LOVETT, M.D.
Southern



GLENN H. WALKER, M.D.
Southwestern

ARMA STAFF



BRUCE E. ROBINSON
Executive Director



GARY L. BARNETT
Associate Executive Director



MISTY COUMBE
Associate Executive Director



JOAN M. BRUNER
Editorial Assistant
Arizona Medicine



GAYLE ELKENDIER
Printing Department



MIKE LANCE
Accounting



STELLA MATIJEVICH
Secretary to Mr. Robinson



HARVEY MORRISON
Maintenance and Evening
Building Supervisor



PRESS PRESTON
Printing Department



CORA SAUNDNERS
Secretary to Mr. Barnett



JOY SHIED
Secretary to Mrs. Coumbe



CAROL TURNER
Stenographer & Membership



MARY WOOD
Special Projects
Coordinator

SCIENTIFIC ASSEMBLY COMMITTEE

responsible for all annual meeting arrangements



MILTON S. DWORIN, M.D.
Chairman

LUIS S. TAN, M.D.
Vice-Chairman

MERRILL M. ABESHAUS, M.D.
SURESH C. ANAND, M.D.
FLOYD K. BERK, M.D.
THOMAS E. BITTKER, M.D.
W. SCOTT CHISHOLM, M.D.
WILLIAM E. CRISP, M.D.
OTTO GAMBACORTA, M.D.
JEROME GERENDASY, M.D.
LAURENCE M. HAAS, M.D.
TIMOTHY R. HARRINGTON, M.D.
CLIFFORD J. HARRIS, M.D.
THOMAS F. HARTLEY, M.D.
WAYNE M. HEINE, M.D.
THOMAS S. HENRY, M.D.
JAMES M. HURLEY, M.D.
MARK M. KARTCHNER, M.D.
NORMAN N. KOMAR, M.D.
EUGENE LEIBSOHN, M.D.
PHILIP LEVY, M.D.
WILLIAM S. NEVIN, M.D.
NEOPITO L. ROBLES, M.D.
EDWARD SATTENSPIEL, M.D.
WILLIAM C. SCOTT, M.D.
RICHARD A. SILVER, M.D.
DONALD P. SPEER, M.D.
WILBUR C. VOSS, M.D.
DONALD J. ZIEHM, M.D.

GOLF TOURNAMENT
IRA B. EHRLICH, M.D.
Chairman

WHITNEY R. WHITE, M.D.
Co-chairman

TENNIS TOURNAMENT
MRS. ROBERT F. CRAWFORD
Chairwoman

TUESDAY, APRIL 27, 1976

7:00 AM Executive Committee Breakfast Lanai Room

BOARD OF DIRECTORS

9:00 AM Board Meeting Embassy Room
12 Noon Board Luncheon French Quarter

HOUSE OF DELEGATES

1:00 PM First General Session Room A2 Convention Center

CALL TO ORDER
Robert A. Price, M.D., Speaker

PRESENTATION OF THE COLORS
Honor Guard and the Airforce Band of the
Southwest courtesy Luke Air Force Base

INVOCATION AND MEMORIAL SERVICE
Jack H. Zoellner, Pastor
Bethany Lutheran Church

WELCOME
George H. Mertz, M.D., President-Elect
Maricopa County Medical Society

INTRODUCTION OF DISTINGUISHED GUESTS
Max H. Parrott, M.D., President
American Medical Association
Ms. Yolanda Valenzuela, President
Arizona Chapter
American Association of Medical Assistants
Mrs. Erle Wilkinson, President
American Medical Association Auxiliary
Mrs. Howard Kimball, President
Arizona Medical Association Auxiliary

INTRODUCTION OF INCOMING PRESIDENT
William C. Scott, M.D.

PRESIDENTIAL ADDRESS
Edward Sattenspiel, M.D.

REGULAR BUSINESS OF THE HOUSE
Refer to the AGENDA section of the Delegates Manual

BLUE SHIELD ANNUAL CORPORATE BODY MEETING

3:30 PM First General Session Room A2 Convention Center

WEDNESDAY, APRIL 28, 1976

8:00 AM ArMA Resolutions Reference Committee Embassy Room Above Hotel Lobby
to be followed by
Blue Shield Resolutions Reference Committee Embassy Room Above Hotel Lobby
8:00 AM ArMA Amendments Reference Committee Directors Room Above Hotel Lobby
12 Noon Past-President's Luncheon French Quarter Room No. 1

SPORTS

12:30 PM Annual Tennis Tournament
Tempe Racquet & Swim Club
2140 E. Broadway Road, Tempe
Entry fee $4.00 Per Person

1:00 PM Annual Golf Tournament Tee-Off Time
Century Country Club
56th Street & Shea, Scottsdale
All inclusive fee $15.00

1:00 PM Needlecraft Director's Room Above Hotel Lobby
5:30 PM Fourth Annual National Calliope Concert North Poolside
Courtesy of Boyden L. Crouch, M.D.
7:00 PM Annual Reception North Poolside
8:00 PM Paul Shank's Fabulous Steak Fry North Poolside
(admission by ticket only)
Dress: Western and casual
The Mariachis Seven

THURSDAY, APRIL 29, 1976

7:00 AM Breakfast French Quarter

7:30 AM to 8:45 AM Panel Discussion for Members and Spouses
Title: The Impaired Physician

Discussants:
Thomas E. Bittker, M.D.
Richard L. Dexter, M.D.
Laurence M. Linkner, M.D.
Moderator:
Richard E. H. Duisberg, M.D.

	Room A1 Convention Center (100)	Room A2 Convention Center (140)	Directors Room Above Hotel Lobby (60)	Embassy Room Above Hotel Lobby (90)
9-9:30	MANAGEMENT OF STROKE Mark P. Heilbrun, M.D. Moderator: John W. Kennedy, M.D.	"PAIN" — Panel Discussants: Raymond A. Huger, M.D. Fred T. Kolouch, M.D. Alvin D. Sidell, M.D. Moderator: Donald E. Howland, M.D.	HEREDITARY HEMOLYTIC ANEMIA G. Richard Lee, M.D. Moderator: John F. Kahle, M.D.	PRIMARY LUNG CANCER-CLASSIFICATION, STAGING, PROBLEMS AND PROSPECTS AS VIEWED BY THE RADIOLOGIST David G. Bragg, M.D. Moderator: Merrill M. Abeshaus, M.D.
9:30-10	STATE OF THE ART IN STROKE Leonard W. Jarcho, M.D. Moderator: John W. Kennedy, M.D.		HISTOLOGIC PARAMETERS DEFINING MINIMAL BREAST CANCER Robert W. McDivitt, M.D. Moderator: John F. Kahle, M.D.	HYPERURICEMIA AND GOUT Cecil O. Samuelson, M.D. Moderator: Merrill M. Abeshaus, M.D.
10-10:30	LAPAROSCOPIC OVARIAN BIOPSY FOR CHROMOSOMAL ANALYSIS Steven I. Dahl, M.D. Moderator: John W. Kennedy, M.D.		MANAGEMENT OF BREECH PRESENTATION A. Marsh Poulson, M.D. Moderator: John F. Kahle, M.D.	EVALUATION AND TREATMENT OF VERTIGO Michael H. Stevens, M.D. Moderator: Merrill M. Abeshaus, M.D.

11-11:30	FAT EMBOLISM — A PROSPECTIVE ANALYSIS OF PATIENTS WITH LONG BONE FRACTURES Stephen R. Stein, M.D. Moderator: Arthur V. Dudley, M.D.	PAIN DUE TO PERIPHERAL NERVE ENTRAPMENT SYNDROMES Earl Z. Browne, M.D. Moderator: Jerome Gerendasy, M.D.	PERMANENT CARDIAC PACING L. Copelli, M.D. Moderator: Thomas E. Bittker, M.D.	COPING WITH THE DISTURBING PATIENT Russell D. Martin, M.D. Moderator: Suresh Anand, M.D.
11:30-12	OBJECTIVE PSYCHIATRIC AND PSYCHOLOGIC SIGNS OF BRAIN DISORDER Warren Gorman, M.D. Moderator: Arthur V. Dudley, M.D.	BIOFEEDBACK: TECHNIQUES AND APPLICATIONS Richard E. McKenzie, Ph.D. Moderator: Jerome Gerendasy, M.D.	THE INFECTED CAT BITE: TYPE CASES OF PASTEURELLA MULTOCIDA INFECTION Douglas Lindsey, M.D. Frederick J. Hirsch, M.D. Moderator Thomas E. Bittker, M.D.	THE USE OF TOTAL PARENTERAL NUTRITION AND ELEMENTAL DIETS IN THE MANAGEMENT OF INTESTINAL FISTULAE R. V. Stephens, M.D. Moderator: Suresh Anand, M.D.

12 Noon to 2:00 PM Specialty Society Luncheons

Arizona Chapter, American College of Obstetricians and Gynecologists French Quarter No. 1

Arizona Society of Physical Medicine and Medical Rehabilitation Lanai Room

American College Emergency Physicians French Quarter No. 2

THURS P.M.	Room A1 Convention Center (100)	Room A2 Convention Center (140)	Directors Room Above Hotel Lobby (60)	Embassy Room Above Hotel Lobby (90)
2-2:30	"ESTATE PLANNING" - PANEL Discussants: Mr. Anthony Ehmann Ms. Martha Russell Mr. Ronald G. Wilson Moderator: Mrs. Ella Kimball		PROBLEMS AND FAILURE OF TOTAL KNEE ARTHROPLASTY Ranjit S. Bisla, M.D. Moderator: Clifford J. Harris, M.D.	ENDOSCOPIC RETROGRADE CHOLANGIOPANCREA-TOGRAPHY George N. Kerrihard, M.D. Moderator: Thomas S. Henry, M.D.
2:30-3			NEW CONCEPTS IN ASTHMA THERAPY Murray Spotnitz, M.D. Moderator: Clifford J. Harris, M.D.	THE ANEMIA OF CHRONIC DISORDERS G. Richard Lee, M.D. Moderator: Thomas S. Henry, M.D.
3-3:30	RECESS	RECESS	RECESS	RECESS
3:30-4	INDICATIONS AND PROCE—DURES FOR SURGERY OF THE HAND IN RHEUMATOIC ARTHRITIS Earl Z. Browne, M.D. Moderator: Laurence M. Haas, M.D.	"BREAST CANCER"- PANEL Discussants: David G. Bragg, M.D. Stephen E. Jones, M.D. Robert W. McDivitt, M.D. Frank G. Moody, M.D. Moderator: Neopito L. Robles, M.D.	PROTEAN MANIFESTATIONS OF PULMONARY COCCIDIOIDOMYCOSIS Robert E. Westfall, M.D. Moderator: Thomas F. Hartley, M.D.	MANAGEMENT OF THE RH NEGATIVE PATIENT A. Marsh Poulson, M.D. Moderator: M. Wayne Heine, M.D.

4-4:30	NEW THOUGHTS ON THE TREATMENT OF RHEUMATOID ARTHRITIS Cecil O. Samuelson, M.D. Moderator: Laurence M. Haas, M.D.		NEW AND OLD ANTIDOTES: WHAT REALLY WORKS Anthony R. Temple, M.D. Moderator: Thomas F. Hartley, M.D.	MEDICAL CARE OF THE PARAPLEGIC Clifford C. Snyder, M.D. Moderator: M. Wayne Heine, M.D.
4:30-5	INDICATIONS FOR CEREBRAL REVASCULARIZATION Mark P. Heilbrun, M.D. Moderator: Laurence M. Haas, M.D.		TOBACCO AND HEALTH John H. Holbrook, M.D. Moderator: Thomas F. Hartley, M.D.	OTALGIA—A COMMON COMPLAINT WITH MANY UNCOMMON CAUSES Michael H. Stevens, M.D. Moderator: M. Wayne Heine, M.D.

5:30 PM Maricopa County Caucus Embassy Room Above Hotel Lobby
7:00 PM ArMPAC Reception Room A1 Convention Center
8:00 PM ArMPAC Annual Banquet Room A1 Convention Center

Guest Speaker: John S. Zapp, D.D.S., Director of Dept. of Congressional Relations, AMA

FRIDAY, APRIL 30, 1976

7:00 AM Breakfast French Quarter

7:30 AM to 8:45 AM PANEL DISCUSSION FOR MEMBERS AND SPOUSES

Title: THE MALE MENOPAUSE

Discussants:
John T. Clymer, M.D.
John P. Heileman, M.D.
Philip Levy, M.D.
Moderator:
Mrs. Howard Kimball

	Room A1 Convention Center (100)	Room A2 Concention Center (140)	Directors Room Above Hotel Lobby (60)	Embassy Room Above Hotel Lobby (90)
9-9:30	CARDIAC (CORONARY) RISK FACTORS John H. Holbrook, M.D. Moderator: W. Scott Chisholm, M.D.	"TRAUMA" - Panel Discussants: Edward Byrne-Quinn, M.D. William M. Davis, M.D. Christopher J. Heller, M.D. Leonard F. Peltier, M.D. Moderator: Lawrence M. Haas, M.D.	CARE SYSTEM FOR THE HIGH RISK OBSTETRIC PATIENT IN ARIZONA William J. Moore, M.D. Moderator: Robert A. Price, M.D.	PULMONARY THROMBOEMBOLIC DISEASE: A RADIOLOGIST'S APPROACH TO THE DIAGNOSIS AND CLASSIFICATION David G. Bragg, M.D. Moderator: Philip Levy, M.D.
9:30-10	CURRENT TREATMENT IN PARKINSON DISEASE Leonard W. Jarcho, M.D. Moderator: W. Scott Chisholm, M.D.		PERSONAL & ENVIRONMENTAL FACTORS INFLUENCING BREAST CANCER RISK Robert W. McDivitt, M.D. Moderator: Robert A. Price, M.D.	PSYCHIATRY AND SURGERY Fred T. Kolouch, M.D. Moderator: Philip Levy, M.D.
10-10:30	SALICYLATE OR ACETAMINOPHEN POISONING — WHICH IS WORSE Anthony R. Temple, M.D. Moderator: W. Scott Chisholm, M.D.		SIDEROBLASTIC ANEMIA G. Richard Lee, M.D. Moderator: Robert A. Price, M.D.	CERVICAL SPINE MOTION IN NORMAL WOMEN: RADIOGRAPHIC STUDY OF EFFECT OF CERVICAL COLLARS Sam C. Colachis, Jr., M.D. Moderator: Philip Levy, M.D.

11-11:30	SURGICAL TREATMENT OF GALL BLADDER DISEASE Frank G. Moody, M.D. Moderator: Bruce N. Curtis, M.D.	MANAGEMENT OF SEVERE HEAD TRAUMA Mark P. Heilbrun, M.D. Moderator: James M. Hurley, M.D.	PERSPECTIVES ON HEALTH PLANNING Louis C. Kossuth, M.D. Moderator: Eugene Leibsohn, M.D.	ANKYLOSING SPONDYLITIS AND VARIANTS Cecil O. Samuelson, M.D. Moderator: William S. Nevin, M.D.
11:30-12	INSULINOMAS: NEW AIDS IN DIAGNOSIS Marshall B. Block, M.D. Moderator: Bruce N. Curtis, M.D.	THE TREATMENT OF COMMON HAND INJURIES Earl Z. Browne, M.D. Moderator: James M. Hurley, M.D.	SEPTIC ARTHRITIS IN A RHEUMATIC DISEASE POULATION Robert Barker, M.D. Moderator: Eugene Leibsohn, M.D.	COMPLICATIONS OF JEJUNOILEAL BYPASS SURGERY C. F. Zukoski, M.D. Moderator: William S. Nevin, M.D.

12 Noon to 2:00 PM SPECIALTY SOCIETY LUNCHEONS

Arizona Psychiatric Society French Quarter #1
Arizona Society of Otolaryngology French Quarter #2
Guest Speaker: Michael H. Stevens, M.D.
Topic: Management of Pediatric Airway Distress
Acupuncture Association of Physicians and Surgeons French Quarter #3

Arizona Chapter, American College of Surgeons Kudu Room
Arizona Society of Allergists Lanai Room

	Room A1 Convention Center (100)	Room A2 Convention Center (140)	Directors Room Above Hotel Lobby (60)	Embassy Room Above Hotel Lobby (90)
2-2:30	TRANSTELEPHONIC ELECTROCARDIOGRAM MONITORING IN PEDIATRIC CARDIAC ARRHYTHMIAS Robert L. Williams, M.D. Moderator: Floyd K. Berk, M.D.	WHAT THE FAMILY PRACTITIONER SHOULD KNOW ABOUT PERIPHERAL NERVE INJURY AND REPAIR Clifford C. Snyder, M.D. Moderator: C. E. Henderson, M.D.	CERVICAL NERVE ROOT INJECTION—A NEW TECHNIQUE FOR THE INVESTIGATION OF UPPER EXTREMITY RADICULAR PAIN EXPERIMENTAL AND CLINICAL STUDY John F. Krempen, M.D. Moderator: Luis S. Tan, M.D.	THE USE OF CONTINUOUS LOW-DOSE INTRAVENOUS INSULIN INFUSION IN THE TREATMENT OF DIABETIC KETOACIDOSIS IN CHILDREN Michael S. Kappy, M.D. Moderator: Wilbur C. Voss, M.D.
2:30-3	DIAGNOSIS AND TREATMENT FOR EIGHTH NERVE TUMORS AN OTONEUROSURGICAL APPROACH John R. Green, M.D. D. W. Frerichs, M.D. Moderator: Floyd K. Berk, M.D.	HERNIORRHAPHY: OUTPATIENT UNDER LOCAL ANESTHESIA. AN IMPROVED TECHNIQUE FOR LOCAL ANESTHESIA Seneca L. Erman, M.D. Moderator: C. E. Henderson, M.D.	MEDICAL HYPNOSIS Fred T. Kolouch, M.D. Moderator: Luis S. Tan, M.D.	THE USE OF THE BOSTON UNDER ARM BRACE IN THE TREATMENT OF THORACOLUMBAR AND LUMBAR SCOLIOSIS—A PRELIMINARY REPORT Larry I. Mann, M.D. Moderator: Wilbur C. Voss, M.D.
3-3:30	RECESS	RECESS	RECESS	RECESS

3:30-4	COMA FROM THE NEUROLOGISTS VIEWPOINT Leonard W. Jarcho, M.D. Moderator: William C. Scott, M.D.	WHAT'S NEW IN DERMATOLOGY - Panel Discussants: Edwin P. Rather, M.D. Richard C. Miller, M.D. Selma E. Targovnik, M.D. Moderator: Daniel F. Shanahan, M.D.	CARDIAC ARRHYTHMIAS FOLLOWING ACUTE MYOCARDIAL INFARCTION IN A GERIATRIC POPULATION Edward L. DuBrow, M.D. Moderator: Donald P. Speer, M.D.	WHAT'S NEW IN SNAKEBITE Clifford C. Snyder, M.D. Moderator: Donald J. Ziehm, M.D.
4-4:30	SURGICAL TREATMENT OF PEPTIC ULCER DISEASE Frank G. Moody, M.D. Moderator: William C. Scott, M.D.		THYROID DISEASE: HEREDITORY AND AUTO-IMMUNE FACTORS Martin D. Mollen, M.D. Moderator: Donald P. Speer, M.D.	THE PERIODIC HEALTH EXAM — PROS & CONS John H. Holbrook, M. D. Moderator: Donald J. Ziehm, M.D.
4:30-5	RECENT ADVANCES IN THE TREATMENT OF HEARING LOSS Michael H. Stevens, M.D. Moderator: William C. Scott, M.D.		EVALUATION OF 600 CASES OF INTRAOCULAR LENS IMPLANTS David D. Dulaney, M.D. Moderator: Donald P. Speer, M.D.	CURRENT CONCEPTS IN THE MANAGEMENT OF POISONING Anthony R. Temple, M.D. Moderator: Donald J. Ziehm, M.D.

7:00 PM PRESIDENT'S RECEPTION North Poolside
8:00 PM PRESIDENT'S BANQUET Convention Center
The Strumming Amigos Bicentennial Review

ANNUAL MEETING PROGRAM

SATURDAY, MAY 1, 1976

6:00 AM Pima County Caucus Lanai Room

HOUSE OF DELEGATES

8:00 AM Second General Session Room A2 Convention Center

to be followed by
ARIZONA BLUE SHIELD CORPORATE BODY — SECOND SESSION

12 Noon ArMA Board of Directors Meeting and Luncheon Kudu Room

12 Noon Specialty Society Luncheons
Arizona Society of Anesthesiologists French Quarter No. 1

GUEST SPEAKERS ARIZONA

ROBERT BARKER, M.D.
Phoenix
MARSHALL B. BLOCK, M.D.
Phoenix
RANJIT S. BISLA, M.D.
Phoenix
THOMAS E. BITTKER, M.D.
Phoenix
EDWARD BYRNE-QUINN, M.D.
Tucson
JOHN T. CLYMER, M.D.
Tucson
SAM C. COLACHIS, JR., M.D.
Phoenix
L. COPELLI, M.D.
Phoenix
STEVEN I. DAHL, M.D.
Tucson
WILLIAM M. DAVIS, M.D.
Tucson
RICHARD L. DEXTER, M.D.
Tucson
EDWARD L. DU BROW, M.D.
Sun City
RICHARD E. H. DUISBERG, M.D.
Phoenix

DAVID D. DULANEY, M.D.
Phoenix
MR. ANTHONY EHMANN
Phoenix
SENECA L. ERMAN, M.D.
Tucson
D. W. FRERICHS, M.D.
Phoenix
WARREN GORMAN, M.D.
Scottsdale
JOHN R. GREEN, M.D.
Phoenix
LAWRENCE M. HAAS, M.D.
Tucson
JOHN P. HEILEMAN, M.D.
Phoenix
CHRISTOPHER J. HELLER, M.D.
Tucson
DONALD E. HOWLAND, M.D.
Phoenix
RAYMOND A. HUGER, M.D.
Phoenix
STEPHEN E. JONES, M.D.
Tucson
MICHAEL S. KAPPY, M.D.
Tucson
GEORGE N. KERRIHARD, M.D.
Tucson
MRS. ELLA KIMBALL
President, ArMA Auxiliary
LOUIS C. KOSSUTH, M.D.
Phoenix
JOHN F. KREMPEN, M.D.
Tucson
PHILIP LEVY, M.D.
Phoenix

DOUGLAS LINDSEY, M.D.
Tucson
LAURENCE M. LINKNER, M.D.
Phoenix
LARRY I. MANN, M.D.
Tucson
RUSSELL D. MARTIN, M.D.
Tucson
RICHARD E. MC KENZIE, Ph.D.
Phoenix
RICHARD C. MILLER, M.D.
Tucson
MARTIN D. MOLLEN, M.D.
Phoenix
WILLIAM J. MOORE, M.D.
Executive Director, Arizona Regio
Perinatal Program
LEONARD F. PELTIER, M.D.
Tucson
EDWIN P. RATHER, M.D.
Tucson
NEOPITO L. ROBLES, M.D.
Tucson
MS. MARTHA RUSSELL
Valley National Bank, Phoenix
DANIEL F. SHANAHAN, M.D.
Phoenix
ALVIN D. SIDELL, M.D.
Phoenix
MURRAY SPOTNITZ, M.D.
Phoenix
STEPHEN R. STEIN, M.D.
Phoenix
R. V. STEPHENS, M.D.
Phoenix
SELMA E. TARGOVNIK, M.D.
Phoenix
ROBERT E. WESTFALL, M.D.
Phoenix
ROBERT L. WILLIAMS, M.D.
Phoenix
MR. RONALD G. WILSON
Valley National Bank, Phoenix
C. F. ZUKOSKI, M.D.
Tucson

GUEST SPEAKERS
UNIVERSITY OF UTAH



DAVID G. BRAGG, M.D.
Professor, Chairman
Radiology



LEONARD W. JARCHO, M.D.
Professor and Chairman
Dept. of Neurology



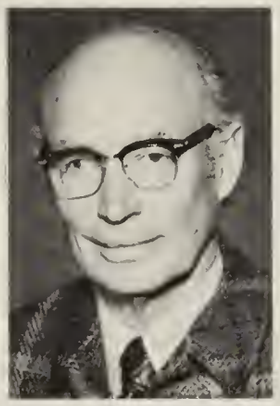
FRANK G. MOODY, M.D.
Professor and Chairman
Dept. of Surgery



CECIL O. SAMUELSON, M.D.
Assistant Professor
Internal Medicine



ARL Z. BROWNE, JR., M.D.
Assistant Dean
Continuing Education



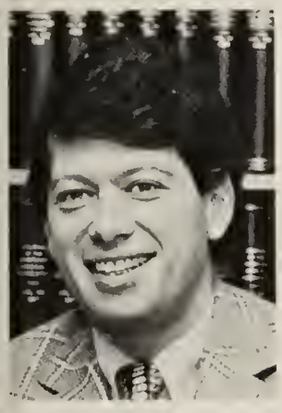
FRED T. KOLOUCH, M.D.
Assistant Professor
Psychiatry



ROBERT W. McDIVITT, M.D.
Professor and Chairman
Div. of Surgical Pathology



CLIFFORD C. SNYDER, M.D.
Professor
Surgery



IARK P. HEILBRUN, M.D.
Assistant Professor
Surgery



G. RICHARD LEE, M.D.
Professor
Internal Medicine



A. MARSH POULSON, M.D.
Dept. of OB-GYN



MICHAEL H. STEVENS, M.D.
Instructor
Surgery



OHN H. HOLBROOK, M.D.
Assistant Professor
Internal Medicine



ANTHONY R. TEMPLE, M.D.
Assistant Professor
Pediatrics & Clinical
Pharmacology & Toxicology

HIGHLIGHTS
ARIZONA MEDICAL ASSOCIATION AUXILIARY
46TH ANNUAL CONVENTION

PRESIDENTS



MRS. GEORGE L HOFFMANN
1976-77



MRS. HOWARD KIMBALL
1975-76

CONVENTION CHAIRWOMAN

MRS. RONALD JOHNSON
1976-77

TUESDAY, APRIL 27, 1976

9:00 a.m. — 4:00 p.m.	Registration	Lobby Convention Center
	(Need transportation? — notify Auxiliary Registration Desk	
1:00 p.m.	ArMA House of Delegates	Room A-2

WEDNESDAY, APRIL 28, 1976

9:00 a.m. — 4:00 p.m.	Registration	Lobby Convention Center
9:00 a.m. — 5:00 p.m.	Hobby Show	Room A-3 Convention Center
	AMA-ERF Booth	Room A-3 Convention Center
1:00 p.m. — 3:00 p.m.	Needlecraft	Directors Room (Upstairs over Lobby)
12:00 p.m. — 3:00 p.m.	Tennis	Arizona Country Club
12:15 p.m.	Past Presidents Gavel Club Lunch	Chez Louis (Scottsdale Mall, 3953 N. Brown, Scottsdale)
10:00 a.m.	Hamer Education Loan Fund	
5:30 p.m.	4th Annual National Calliope Concert	
7:00 p.m. — 8:00 p.m.	Annual Reception	North Poolside
8:00 p.m.	Annual Steak Fry	North Poolside
	(Dress: Western or Casual)	

THURSDAY, APRIL 29, 1976

7:00 a.m. — 8:45 a.m. "The Impaired Physician" French Quarter
Breakfast
Thomas E. Bittker, M.D.
Richard L. Dexter, M.D.
Laurence M. Linkner, M.D.
Richard E. H. Duisberg, M.D., Moderator

8:45 a.m. — 9:30 a.m. Pre-Convention Board Meeting Doubletree Inn
Breakfast (Complimentary) Bonsai & Banyan Room
In attendance — all 1975-76: State Officers, State Committee Chairmen & Co-Chairmen, Members of State Nominating Committee, County Presidents and Special Guest — Mrs. Erle Wilkinson

9:30 a.m. — 11:00 a.m. First General Session Doubletree Inn (Bonsai & Banyan Room)
All Auxiliary members are invited and need to attend

11:00 a.m. — 12:00 p.m. Mini Workshop Conducted by Mrs. George Hoffmann

12:00 p.m. — 12:30 p.m. Patio Lunch Doubletree Inn (Bonsai & Banyan Room)

12:30 p.m. — 1:15 p.m. Workshop continued

2:00 p.m. — 4:00 p.m. "ESTATE PLANNING" Room A-2
Mr. Anthony Ehmann, Attorney
Mr. Ronald Wilson
Mrs. Martha Russell
Moderator: Mrs. Howard Kimball

9:00 a.m. — 1:00 p.m. Registration Doubletree Inn
Hobby Show Room A-3 Convention Center

1:00 p.m. — 5 p.m. Registration Lobby Convention Center
AMA-ERF Booth Room A-3 Convention Center

7:00 p.m. — 8:00 p.m. ArMPAC Annual Reception Convention Center

8:00 ArMPAC Annual Dinner Convention Center

FRIDAY, APRIL 30, 1976

7:00 a.m. — 8:45 a.m. "MALE MENOPAUSE" — "Mid-Life Crises" French Quarter
Breakfast
Dr. John Heileman, Dr. Philip Levy and Dr. John P. Clymer
Moderator: Mrs. Howard Kimball

9:00 a.m.
Continental Breakfast
Second General Session Doubletree inn Bonsai & Banyan Room
Included in Agenda:
Memorial Hour Mrs. Sam Mackoff
Address by National Officer — Mrs. Erle Wilkinson
President's Report Mrs. Howard Kimball

12:00 Noon
Luncheon & Fashion Show Biltmore Hotel
Chairman — Mrs. Frederick Jensen Aztec Room
Invocation: The Rev. Culver H. Nelson, D.D.
Church of the Beatitudes
Announcement of Winner — Hobby Show
Fashion Show — Beaton's, Carriage House
Models — Auxiliary Members
Immediately following close of Second General Session there will be Post Convention Board Meeting — 1976-77 Board

2:30 p.m.
Tour of Wrigley Mansion

9:00 a.m. — 11:30 a.m. Hobby Show Room A-3 Convention Center
Registration Lobby Convention Center

7:00 p.m.
President's Reception North Poolside

8:00 p.m.
President's Banquet Convention Center



Editorial

SOCIAL SECURITY A COSTLY ADMINISTRATOR

One of the great outcries of the day is that privately oriented health care is not economical and systematic enough and that the federal government should spring to the rescue, a la Rin Tin Tin. But how deft is the government (notably the Social Security Administration) in cost management? How qualified is it to administer any program of National Health Insurance? How blameless is it for the expense of Medicare?

Negative answers can be inferred from a recently released study of Medicare Part A cost performance. What makes the study especially noteworthy is its source: the General Accounting Office (GAO), a federal agency.

GAO compared SSA's performance with that of four private insurance companies in dealing with institutional providers of Medicare services.

The average cost—excluding audit—of a bill processed by SSA's Division of Direct Reimbursement (DDR) was $12.39 in 1973, compared with $7.31 for Travelers, $7.28 for Mutual of Omaha, $3.81 for Blue Cross of Chicago, and $3.55 for Blue Cross of Maryland. The lower costs for the "Blues" were attributed partly to their smaller, more wieldy territories.

However, GAO found that "higher salaries and lower productivity appear to be major reasons for the higher costs of the Division (DDR), which, unlike the private intermediaries, had no production standards."

DDR's annual compensation exceeded that of neighboring Maryland Blue Cross by 25% for accountants and auditors, 51% for claims examiners.

"Despite DDR's higher costs," the report continued, "it generally took longer than other intermediaries to pay bills and settle with providers. Its error rate was average."

Adding to the weight of the findings is the nonpolitical, independent character of the General Accounting Office. It is the fiscal watchdog of Congress, though its head (the Comptroller General) is appointed by the President. Its Medicare report was a detailed response to questions put to it by the House Ways and Means Committee chairman.

All of this should be borne in mind in weighing the rebuttals from the Department of Health, Education, and Welfare—and from Max W. Fine, executive director of the Committee for National Health Insurance and prolific writer of sly "letters to the editor" of newspapers.

HEW—and Fine—call the report outdated. But DDR's lack of cost data (GAO had to develop them) could help explain the delay.

HEW contends that its cost per bill are overstated for 1973 since bills processed through magnetic tape are excluded. HEW also maintains that costs have dropped since 1973, though this is also true for other carriers in the study. GAO said it has not verified the new figures.

So the burden of proof hangs heavy on the Social Security Administration. Meanwhile, Congress ought to think hard about the report from its fiscal watchdog. And think hard about making SSA the health-insurance administrator for the public at large, as proposed in such legislation as the Kennedy bill.

Report on the Housestaff Section

NATIONAL HOUSESTAFF ACTIVITIES

Political activity by interns and residents at the national level is a recent phenomenon. Although well organized local housestaff associations have existed for over fifteen years in major urban training programs, such as in New York and Los Angeles, national activity has been visible for only the past three or four years. This activity has taken the form of developing representative organizations, establishing relationships with organized medicine and other health-care related groups, and addressing issues of particular concern to housestaff.

A national association of housestaff organizations, the Physicians' National Housestaff Association (PNHA), was formed in 1972. The primary concern of the PNHA has been organizing and servicing its local affiliate associations in order to strengthen the voice of housestaffs and improve working conditions and patient care in teaching hospitals. The PNHA and many of its affiliates have adopted collective bargaining as a principal means to these goals and it has recently elected to become a national housestaff union.

Also in 1972, the Intern and Resident Business Session (IRBS) was established within the AMA. The IRBS has worked closely with other elements of the AMA and the PNHA to increase the voice of housestaff within the AMA and the profession. Within the past year Arizona housestaff and ArMA have formed an ArMA Housestaff Section in order to establish a communication and relationship similar to the IRBS and AMA.

Among the principal issues and areas of concern addressed by organized housestaff activity have been the following: 1) establishing fair relationships between housestaff and their training institutions and defining this relationship in a written contract, 2) establishing the rights of housestaff and other physicians to due press and fair treatment in grievance procedures within their institutions, 3, advocating fair treatment within the profession of minority physicians such as foreign medical graduates, women and ethnic minorities, and 4. establishing collective bargaining mechanisms between housestaff associations and training institutions and strengthening the collective bargaining abilities of housestaff.

Housestaff activities are becoming an increasingly important part of organized medicine. In future columns, ArMA Housestaff Section members will discuss in greater detail the organizations and issues that comprise these activities.

Gordon R. Tobin, M.D.
Past Vice Chairman
Intern & Resident
Business Session

Letters to Editor

William C. Scott, M.D.
President, Arizona Medical Association
810 West Bethany Home Road
Phoenix, Arizona 85013

Dear Dr. Scott:

I appreciate very much the "Doctor for A Day" program for members of the Arizona legislature. This type of cooperative effort that is not mandated by law is unique and I feel we should do more by cooperation and less on the basis of legal obligation.

Sincerely yours,
Daniel Peaches

THE PRESCOTT VA CENTER

WENONA C. CLARK

The Veterans Administration Center, Prescott, Arizona, still referred to as "Whipple", is unique in that it developed simultaneously with the City of Prescott and the Territory and State of Arizona. Although little, except the site and a few of the older buildings, remains of historic Whipple, a pervasive sense of history still lingers.

Old Fort Whipple[1] was established late in 1863 when President Lincoln granted territorial status for Arizona and dispatched officials to the area. The original "fort", located in Chino Valley, was made the temporary "seat of government".



WHIPPLE MEDICAL STAFF—1922 — U.S. Public Health Service, Front Row L to R — L. W. Swartz, Gail D. Allee, CO, Ingerscoll, Dentist. 2nd row — Roark; I. D. Loewy, Chief, Med. Serv.; Brooks. 3rd Row — Enoch Seale; Rene Arntzer; Herrick; Buck; L. B. Collier, Dentist. 4th Row — Eugene Gotterdam; K. A. Carroll; Christman; McCarth; Malone; Grieger. 5th Row — Mattice; James D. Allen; McWhirt; Carrington.

Wenona C. Clark, Chief Librarian, VA Center, 1951-1975.
From: 804 Country Club Drive, Prescott, Arizona 86301



Apache Scouts — U.S. Service 1860's

However, within six months, in April 1864, the town of Prescott was founded and made the territorial capital. Ft. Whipple was moved to a site nearby to provide better protection for the incoming settlers and miners responding to the discovery of gold. The fort itself was typical stockade construction of log buildings surrounding a 200 foot square plaza.

Most of the medical positions during the early years were filled by contract surgeons who were expected to serve in field expeditions as well. Salaries were $100 to $125 a month, plus fuel and quarters. Two contract surgeons accompanied the officials of territorial government to Arizona —Dr. Thaddeus P. Seeley, a graduate of the University of Michigan, and Dr. Charles Lieb whose medical record remains clouded and who resigned under fire for his outside activities. Dr. Elliott Coues, a graduate of Columbian College, Washington D.C., who replaced Dr. Seeley in 1864, described his duties as "alternating between the ordinary charge of a post-hospital and campaigning against the Indians . . . Probably one quarter of my duty was active field service. I participated in only one fight, however, as on most expeditions I was attached to were not successful in catching Indians." Dr. Coues spent much time collecting plants and other specimens for Smithsonian Institution where he was later assigned. He made some contributions to early medical literature, such as an article on extraction of arrow points, but he achieved more fame as an ornithologist and naturalist. He also wrote on early Southwestern history.

Before facilities were available in the town of Prescott, civilian patients often received treatment at Ft. Whipple. Arizona Miner of June 2, 1864, reported that one William Bottsford, express messenger, was attacked by Indians and struck in the back by an arrow. Returning to Prescott, he was treated by Dr. Seeley. Items of this kind were fairly common, usually concerning treatment for arrow or gunshot wounds.

In 1865, General John Mason, Military Department Commander, vacated his own quarters for use as a post hospital. Conveniently located between the post and the town, the hospital



Scouting Party Trailing Apache Kid 1880's

served both the troops and the townspeople until it burned in 1874. It was an eight room building of hand-hewn logs and capable of housing 24 patients. It had piped running water and was heated by open fireplaces. A monotonous diet was the chief complaint. Bedbugs had a particular affinity for the pine longs. Structurally, this building was said to be the best military hospital in the entire territory for as long as it remained. Dr. Edward Phelps, John E. Clutter and Charles Newhall were contract surgeons at this time. Dr. Phelps signed on as surgeon when the California Volunteers were mustered out and became a federal marshall in addition to his service with the Army. When the capital was moved to Tucson in 1867, both Phelps and Clutter advertised as "Contract Surgeons, Tucson and Prescott". Phelps eventually requested cancellation of his contract since he could not do justice to the practice of medicine and attend seven terms of court. Dr. Phelps' untiring efforts during the 1870 smallpox epidemic in Tucson earned praise as did his attendance to patients but there was another side to his life. Early in 1871 he was found to be missing along with $12,000 of government funds. It was thought that he was murdered on his way to Mexico City.

Through the years a succession of young contract surgeons served Whipple, most of them professionally qualified and popular in the community. During the 1870's Prescott suffered several epidemics, such as smallpox 1876-78, scarlet fever, diptheria, and typhoid fever. It is worthy of note that during this period, the Yavapai County Board of Supervisors paid the federal government at Fort Whipple for the care of indigent sick before a private contract for their care was made.

Lt. Colonel George Crook took over command of the Military Department of Arizona, with headquarters at Ft. Whipple, in 1871 at the height of the Indian depredations. February 1873 saw an entire new era in communications ushered in as the first telegraph circuit linked Ft. Whipple with San Diego, Fort Yuma and Maricopa Wells. Interestingly, the first message to Whipple advised Lt. Colonel Crook of his promotion to Brigadier General. This military



Hospital Building, Fort Whipple 1878



U.S. Public Health Hospital No. 50 1922

line was always open to civilian use and its completion therefore a most important historical event.

One of the contract surgeons at the Fort in the 1870's was Dr. Frederick C. Ainsworth. Newspaper items noted surgery and numerous calls made on the sick by Dr. Ainsworth, a bachelor who was very popular with the local ladies. He had his brother, Dr. Frank Kenly Ainsworth come to Prescott to take his place when he was transferred in 1880. Dr. Frederick later became Adjutant General of the U.S. Army and Dr. Frank became the first Surgeon General of Arizona Territory and first president of a territorial medical organization in 1884. General Leonard Wood began his medical and military career at Ft. Whipple in 1885 soon after graduating from Harvard medical School and interning at Boston City Hospital. He was here only a short time before proceeding to Ft. Huachuca.

Dr. John R. Green of Barrow neurological Institute, Phoenix, reported on probably the first trephination in the Territory, performed at Whipple on April 1, 1883, by Asst. Surgeon George McCreery. Sgt. James M. Patterson, 21, was kicked by a horse on March 1, but diagnosis of compound fracture of the skull delayed until April 1, when he was trephined by Dr. McCreery. The patient made "rapid improvement" until May 31 when convulsions and coma followed and he died June 1, 1883. Dr. McCreery was on an extended scouting party from May 24 to June 23 so was unable to complete his report. Dr. Green's full account was published in *Montana* Summer 1967.

In 1902 Major General Arthur MacArthur visited the post, now Whipple Barracks, and instituted an era of expansion. A number of buildings from this period are still in use, notable amples being the old "Officers Row" in service today as personnel residences with their historical integrity beautifully preserved. Also, the barracks hospital, with historic exterior preserved, is now the Education Building. Very early in 1900, Prescott physician Dr. Clarence E. Yount, Sr. teamed with Dr. Henry D. Thomason of Whipple for possibly the first use in the Territory of spinal anesthesia in surgery. Dr. Yount presented a paper to the doctors meeting in 1905 describing extensive use in a wide variety of cases.

The life of Whipple as a hospital began in 1918 with an extensive building program, transforming the Barracks into U.S. Army Hospital No. 20, with a bed capacity of 650 devoted mostly to treatment of tuberculosis. Lt. Colonel C. E. Holmberg was Commanding Officer, followed in 1919 by Maj. Richard Bew and Lt. Col. Raymond Bliss.

U.S. Public Health Service operated the hospital from 1920 to 1922 when the Veterans Bureau was created. By May 1924, under the outstanding leadership of Dr. Gail D. Allee, it was the 4th largest veterans hospital in the U.S. and second in the care of tuberculosis. Bed capacity was 919 and occupancy about 700. Dr. W. E. Chambers was in charge as the Bureau became the Veterans Administration in 1930. A new main hospital building was completed in 1939 and remains in service with extensive modernization. Gen. Omar Bradley, VA Administrator, made sweeping changes in 1946, including opening of the Domiciliary Section at Whipple for care of verterans unable to maintain themselves but not needing hospitalization. From early classification as a TB Hospital, Whipple is now designated as a GM & S Hospital and Center, conversion of TB beds being completed in 1969.

Today the Center has more than 400 employees, including 19 physicians and 134 nurses. Bed capacity is 236 for the hospital and 232 for the



domiciliary. The hospital is equipped with modern facilities and services, including an Intensive Care Unit, Coronary Care Unit, Respiratory Care Unit and Nuclear Medicine Service. Dental, Clinical Psychology, Clinical Social Work, Rehabilitation Medicine, Chaplaincy, General and Medical Library, and Voluntary Services are all provided on a full time basis. The hospital is presently under contract to supply diagnostic nuclear medicine to Yavapai Community Hospital and to Marcus Lawrence Hospital of Cottonwood. The concept of sharing expertise and equipment with the community is fully implemented through the Center Director, Virgil I. McIntyre, and the Chief of Staff, Dr. William G. Hook.

Present educational affiliations are with:

Yavapai Junior College, Prescott — *Nursing Education*

Arizona State University, Tempe — *Nursing Education and Social Work Education*

Northern Arizona University, Flagstaff — *Dental Hygiene, Manual Arts Therapy and Speech Therapy*

University of Arizona, Tucson — *Nursing Education and Nurse Practitioner Education*

University of Maryland, College Park — *Psychology*

Through its Continuing Medical Education Program, Whipple physicians and those of northern Arizona are granted credit hours toward the Certificate awarded by the Arizona Medical Association and the American Medical Association.

The hospital is now a member of VA District No. 25, which includes three medical school affiliations. There is also anticipation of its use as an education resource for a federally funded medical school for American Indians.

And so, today, as it has for more than one hundred years, "Whipple" continues to play a vital role as one of the state's leading medical institutions.

1. Fort Whipple was named in honor of Major-General Amiel Weeks Whipple of the Topographical Engineers who explored the Chino Valley area while locating a rail route to California in 1853. He was killed in the Battle of Chancellorsville in 1863.

•Source for much of the medical information on early Whipple was *Medicine in Territorial Arizona*, by Frances E. Quebbeman, Arizona Historical Foundation, 1966. The assistance of Dr. Florence Yount of Prescott is also gratefully acknowledged

Photos Courtesy Sharlott Hall Museum.

ARIZONA MEDICAL HISTORY QUIZ — II

DRY GULCH JAKE

This will contribute no points to your continuing Medical Education star; but may remind you that physicians were here and doing, before the advent of antibiotics and radioimmune assay!

Q. 1. Two army physicians were medal of honor winners "leading soldiers into battle against the Apache Indians" name one.

Q. 2. This physician announced his arrival in Tucson in the "Arizona Miner," March 23, 1864, he ran a drug store, practiced medicine and served as Justice of the Peace for thirty years.

Q. 3 This doctor was said to have been the "dean of the profession" in Prescott in the early days. He arrived with the California Volunteers as Captain of Company I, 7th California Infantry, mustered out in 1866 he returned to Prescott to practice medicine and manage the Pioneer Drug Store.

Q 4. Physicians have long been targets of unhappy patients, until recently the personal violence was usually by firearms, now by malpractice suites. This physician who practiced in Yuma was an early victim.

Q 5. This physician probably made the first published record of a laparatomy for gunshot wound of the abdomen, in the Arizona Territory. There must have been earlier such operations, but no records are known. However, opening the belly in 1870-1880's was only for the daring surgeon. Foremost surgeons who attended President Garfield shot in 1881, did not attempt the operation.

Answers on Page 239

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

THE ARIZONA MEDICAL ASSOCIATION, INC.

SCIENTIFIC ASSEMBLY COMMITTEE

The meeting of the Scientific Assembly Committee of the Arizona Medical Association, Inc. held Saturday, December 13, 1975 at 810 W. Bethany Home Road, Phoenix, Arizona convened at 1:41 P.M., Milton S. Dworin, M.D., Chairman, presiding.

MINUTES

The minutes of the meeting held 11/8/75 were approved as distributed.

LOCAL PAPERS

Of the thirty-five papers submitted for consideration, the following were accepted.

1. Insulinomas: New Aids in Diagnosis
2. Cervical Spine Motion in Normal Women: Radiographic Study of Effect of Cervical Collars
3. Perspectives on Health Planning
4. Septic Arthritis in a Rheumatic Disease Population
5. Complications of Jejunoileal Bypass Surgery
6. Transtelephonic Electrocardiogram Monitoring in Pediatric Cardiac Arrhythmias
7. Cervical Nerve Root Injections — A new Technique for the Investigation of Upper Extremity Radicular Pain Experimental & Clinical Study
8. Diagnosis and Treatment of Eighth Nerve Tumors — An Otoneurosurgical Approach
9. The Use of Continuous Low-dose Intravenous Insulin Infusion in the Treatment of Diabetic Ketoacidosis in Children
10. Herniorrhaphy: Outpatient Under Local Anesthesia. An Improved Technique for Local Anesthesia
11. The Use of an Underarm Brace in the Treatment of Thoracolumbar and Lumbar Scoliosis — A Preliminary Report
12. Cardiac Arrhythmias following Acute Myocardial Infarction in a Geriatric Population.
13. Thyroid Disease: Hereitary and Autoimmune Factors
14. Evaluation of 600 Cases of Intraocular Lens Implants
15. Fat Embolism — A Prospective Analysis of Patients with Long Bone Fractures
16. Objective Psychiatric and Psychologic Signs of Brain Disorder
17. Laparoscopic Ovarian Biopsy for Chromosomal Analysis
18. Biofeedback: Techniques and Applications
19. Permanent Cardiac Pacing
20. Coping with the Disturbing Patient
21. The Infected Cat Bite: Type Case of Pasteurella Multocida Infection
22. The Use of Total parenteral Nutrition and Elemental Diets in the Management of Intestinal Fistulae
23. Problems and Failure of Total Knee Arthroplasty
24. Endoscopic Retrograde Cholangiopancreatography

25. New Concepts in Asthma Therapy
26. Protean Manifestations of Pulmonary Coccidioidomycosis
27. Care System for the High-Risk Obstetric Patient in Arizona

SCIENTIFIC EXHIBITS

Twenty-nine exhibit applications were received. Because of space limitations only twelve could be approved, they were as follows:

1. Peak Urinary Flow Rate — A simple screening test for lower urinary tract obstruction.
2. Disability Evaluation Under Social Security
3. Recent Advances in Ophthalmology
4. Management of Ankle Fractures
5. Tuberculosis: Unsuspected Disease of the Elderly
6. Electronystagmography: Its Significance in the Evaluation of the Dizzy Patient
7. Current Cytogenetics
8. Biofeedback Demonstration
9. Arizona Regional Perinatal Program
10. The Fetal Patient
11. The Battered Child Syndrome
12. Management of Trauma

"ESTATE PLANNING" PANEL

IT WAS MOVED AND CARRIED TO HAVE AT LEAST THREE PEOPLE ON THIS PANEL AS ORIGINALLY PLANNED INSTEAD OF HAVING IT A ONE PERSON PRESENTATION AS HAD BEEN SUGGESTED.

TENNIS TOURNAMENT

Mr. Robinson reported that Mrs. Robert Crawford had agreed to chair the annual tennis tournament.

Meeting adjourned 2:55 P.M.

William E. Crisp, M.D.
Secretary

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, AZ on Saturday, January 10, 1976, a quorum being present, convened at 10:16 a.m., William C. Scott, M.D., President and Chairman presiding.

WELCOME

Dr. Scott welcomed the several county society presidents and other guests.

MINUTES

The minutes of the Board of Directors meeting of the Association held 9 27 75 and the minutes of the Board of Diretors meeting of the Association's Foundation held 9 27 75 were approved as distributed.

ArMPAC

Dr. Langston, who could not be present, did extend an invitation to all present to attend ArMPAC's Political Education Seminar scheduled for February 14, 1976 at 10 A.M. at the Association's offices. Mr. Robinson reported that 47 have signed up for the Seminar to date.

BOARD OF DIRECTORS

1976 Dr. Rodman E. Sheen and Thomas G. Sheen Award

The Chairman reviewed to call for nominations for the subject AMA awards. He indicated that February 15, 1976 was the deadline for submitting nominations — RECEIVED.

Dues Payment Schedule

The Maricopa County Medical Society recommendation that a way be found to arrange for dues to be paid on a monthly or quarterly basis was discussed.

IT WAS MOVED AND CARRIED TO REFER THIS MATTER TO THE ARTICLES AND BYLAWS COMMITTEE FOR THE PURPOSE OF PREPARING THE PROPER AMENDMENTS TO THE BYLAWS TO IMPLEMENT THE RECOMMENDATION. IN ADDITION THE DELEGATES TO THE AMA ARE ASKED TO INTRODUCE A RESOLUTION IN THE HOUSE OF DELEGATES OF THE AMA IN JUNE TO ACCOMPLISH THE SAME GOAL.

A. H. Robins Award

Mr. Robinson reported that, to date, no nominations had been submitted for the subject award. It was determined to send out a follow-up letter to the county society presidents.

EXECUTIVE COMMITTEE

Cochise County

(a) Joseph Saba, M.D., Active to Associate — Account Retirement — Dues Exempt — Effective 1/1/76

Maricopa County

(a) Sam W. Banks, M.D., Active to Active Over 70 — Account Age — Dues Exempt — Effective 1/1/76
(b) Stanford F. Farnsworth, M.D. — Active to Associate — Account Retirement — Dues Exempt — Effective 1/1/76
(c) L. F. Jourdonais, M.D. — Active to Active Over 70 — Account Age — Dues Exempt — Effective 1/1/76
(d) Mahlon D. Prickett, M.D. — Active to Associate — Account Illness — Dues Exempt — Effective 1/1/76
(e) Maurice Rosenthal, M.D., Active to 50 Year Club — Account Service — Dues Exempt — Effective 1/1/76
(f) Anthony Salvatore, M.D. — Active to Active Over 70 — Account Age — Dues Exempt — Effective 1/1/76
(g) W. Walter Sittler, M.D. — Active to Active Over 70 — Account Age — Dues Exempt — Effective 1/1/76
(h) Kenneth E. Starz, M.D. — Active to Associate — Account Residency — Dues Exempt — Effective 1/1/76
(i) Margaret Tenbrinck, M.D., Active to Associate — Account Retirement — Dues Exempt — Effective 1/1/76
(j) Sol Z. Weinzeig, M.D. — Active to Associate — Account Further Training — Dues Exempt — Effective 1/1/76
(k) Morton S. Thomas, M.D. — Active to Associate, Account Further Training — Dues Exempt — Effective 1/1/76

Pima County

(a) William E. Davis, M.D. — Active to Affiliate — Account Out of State — Dues Exempt — Effective 1/1/76
(b) Stuart R. Hameroff, M.D. — Active to Associate — Account Residency — Dues Exempt — Effective 1/1/76
(c) Edward L. Kettenbach, M.D., Active to Associate — Account Retirement — Dues Exempt — Effective 1/1/76
(d) DeArmond Lindes, M.D., — Active to Service — Account Federal Employment — Dues Exempt — Effective 1/1/76

(e) Lewis W. Woodruff, M.D. Service to Associate — Account Retirement — Dues Exempt — Effective 1/1/76

Yuma County

(a) Robert M. Matts, M.D., Active to Associate — Account Retirement — Dues Exempt — Effective 1/1/76

Exemption Requests Approved

Pima County

(a) Joseph S. Cotner, M.D. — 1975 dues exemption due to financial hardship

(b) Nagel Patel, M.D. — Exemption from building assessment due to financial hardship

(c) Shobha Patel, M.D. — Exemption from building fund assessment due to financial hardship

(d) Martin S. Withers, M.D. — Exemption of 1976 dues due to financial hardship

BENEVOLENT AND LOAN FUND COMMITTEE

The letter dated 10/26/75 from Timothy P. Derksen expressing his appreciation for the scholarship award was received.

FINANCE COMMITTEE

Dr. Dexter, Treasurer, reviewed the financial statement for the period ending 11/30/75. He pointed out that while we did need to borrow funds during the last several months, they had been paid off on 1/9/76. He also stated that the annual audit by Henry & Horne, C.P.A.'s was under way and the report would be presented to the Board upon completion.

GOVERNMENTAL SERVICES COMMITTEE

IT WAS MOVED AND CARRIED TO CONFIRM THE APPOINTMENT OF ALLAN ENGELBERG, M.D. TO THE COMMITTEE.

HEALTH MANPOWER COMMITTEE

Arizona Health Service Corp.

Louis C. Kossuth, M.D., Chairman of the Health Manpower Committee, reviewed the Grant Proposal for the Health Service Corps as developed by the Health Manpower Committee.

Following an extended discussion and question and answer period the following action was taken:

IT WAS MOVED AND CARRIED TO APPROVE THE GRANT PROPOSAL FOR THE ARIZONA HEALTH SERVICE CORP. AND AUTHORIZE THE HEALTH MANPOWER COMMITTEE TO PROCEED TO SEEK APPROPRIATE FUNDING.

Health Manpower Linkage Questionnaire

IT WAS MOVED AND CARRIED TO APPROVE FOR DISTRIBUTION THE HEALTH MANPOWER LINKAGE QUESTIONNAIRE, WITH THE PROVISO THAT RESOURCES BE IDENTIFIED FROM SOURCES OTHER THAN THE ARIZONA MEDICAL ASSOCIATION TO FINANCE THE PROJECT.

HOUSESTAFF SECTION

AMA Model Contract

Dr. Foster's letter 11/17/75 thanking the Board of Directors for endorsing the AMA Model Contract was received.

Bylaws

The proposed bylaws for the Housestaff Section were reviewed. Question was raised as to Section III — Membership — specifically that portion dealing with certification of physicians in the federal service.

IT WAS MOVED AND CARRIED TO APPROVE THE BYLAWS AS PRESENTED AND TO ASK THAT THE SECTION INFORM THE BOARD OF DIRECTORS WHEN GUIDELINES ARE DEVELOPED TO HANDLE THE CERTIFICATION MATTER.

AMA—IRBS

Dr. Butler's letter of 12/22/75 regarding the AMA—IRBS meeting in San Francisco was received. It was noted that H.G. (Corky) Butler, M.D. has been elected Secretary of the IRBS.

Dr. Foster's Resignation

Coy Z. Foster, M.D. Submitted his resignation as Chairman of the Housestaff Section due to personal reasons.

LEGISLATIVE COMMITTEE

Appointment

IT WAS MOVED AND CARRIED TO APPROVE THE APPOINTMENT OF H. G. BUTLER, M.D. TO THE LEGISLATIVE COMMITTEE.

MALPRACTICE INSURANCE CRISIS COMMITTEE

December 20th meeting

Dr. Scott reviewed the subject meeting at the Safari Hotel incating that over 1700 attended, indicating a great interest and response on the part of the membership.

Malpractice Insurance & Staff Privilege

Dr. Reed introduced the following Resolution:

"WHEREAS, in 1965 the House of Delegates of the American Medical Association adopted the following resolution:

"Doctors should be encouraged to carry professional liabiy insurance that is adequate. However, this encouragement towards self-protection should come from local medical societies and not as a result of coercion on the part of a hospital. There are legal as well as professional reasons why the evaluation of a physician's qualifications for staff privileges should not, in effect, be delegated to an insurance company."

AND WHEREAS, it is implicit in the resolution that the highest standards fo medical practice prevail when medical staff privileges are limited or denied only for reasons related to professional competence or ethical judgment,

BE IT THEREFORE RESOLVED, that the Board of the Arizona Medical Association go on record as supporting the above resolution adopted by the American Medical Association in 1975 and urge its adoption by the House of Delegates of the Arizona Medical Association at the next annual meeting."

IT WAS MOVED AND CARRIED TO SUPPORT THE AMA'S RESOLUTION AS STATED ABOVE AND URGE ITS ADOPTION BY THE HOUSE OF DELEGATES AT ITS NEXT ANNUAL MEETING.

MATERNAL AND CHILD HEALTH CARE COMMITTEE

Appointment

IT WAS MOVED AND CARRIED TO CONFIRM APPOINTMENT OF EDWARD KILGORE, M.D. TO THE COMMITTEE.

Patient Statements to Physicians

Dr. Scott reviewed ArHA's Memorandum No. 117 which was in response to our request that the Hospital Association investigate the feasibility of each hospital providing each physician a copy of the patient's bill. RECEIVED

MEDICAL ECONOMICS COMMITTEE

Dr. Moraca reviewed the background and development of the proposed Arizona Medical Services Terminology and Descriptive Index.

IT WAS MOVED AND CARRIED TO SUBMIT THE INDEX TO THE HOUSE OF DELEGATES FOR THEIR CONSIDERATION AND POSSIBLE APPROVAL.

AMA DELEGATES REPORT

Drs. Shapiro, Dudley, Mr. Outcalt and others reported on the 1975 Clinical meeting which has been reported extensively in various publications. RECEIVED.

CORRESPONDENCE

AMSA

Marc J. Staman, Treasurer of the Arizona Chapter, American Medical Student Association's letter dated 12/15/75 expressing appreciation for our annual $200.00 contribution was received.

Auxiliary

Mrs. George L Hoffman's, President, Woman's Auxiliary to ArMA, letter of 11/15/75 regarding 1976-77 activities was received. It was noted that the contribution to the Auxiliary was increased to $1200 this year instead of the usual $1000 which has been traditional.

Specialty Services

The President of the Arizona Psychiatric Society wrote, expressing thanks for the cooperation and leadership the Association is taking in providing services to the various medical specialty groups within the state.

Professional Guild of Arizona

The Maricopa County Medical Society's letter of 10/27/75 indicating that they would not be sponsoring a program with the subject organization was received.

CHAMPUS

The following letter from Col. Peter W. Stiles cancelling our contract with the Office for the Civilian health and Medical Program of the Uniformed Services.

> "We have recently received a memorandum from the Office of the Assistant Secretary of Defense (Health and Environment) directing us to discontinue our remaining three-party contracts. Consequently, we must abide by this decision and not include your Association as a party to the new contract to be negotiated effective 1 July 1976.
>
> We fully appreciate your continued interest and assistance in our Program over the years and especially the unique opportunity this arrangement offered in affording us direct input into the Arizona medical community. Unfortunately, this formal contractual relationship must now come to a close.
>
> We are making you aware of this future action with the secure knowledge that future contracts with CHAMPUS will remain as cooperative in the future as they have always been in the past."

Accreditation

A letter from the Medical Education Committee advising the Board of Directors that the Continuing Medical Education have accredited the programs of the Prescott Veterans Administration, and the Maricopa County General Hospital for four years was received.

OTHER BUSINESS

P.S.R.O. Amendments

Dr. Scott reviewed recently passed legislation H.B. 10284 which deals with changes in the P.S.R.O. law, one section of which changes the situation so that it might be feasible to have one PSRO area for the state of Arizona instead of two areas. RECEIVED FOR INFORMATION.

Malpractice

The flyer created by the Coconino County Medical Society for distribution to the member's patients was reviewed and commended. Considerable discussion ensued on the 1/9/76 draft of the proposed malpractice legislation. The general feeling being that it is only a beginning and that it will not solve the problem.

Meeting adjourned 12:55 p.m.

William E. Crisp, M.D.
Secretary
by
Bruce E. Robinson
Executive Director

EXECUTIVE COMMITTEE

The Executive Committee meeting of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, AZ on Thursday, January 8, 1976, a quorum being present, convened at 6:09 p.m., William C. Scott, M.D., President and Chairman presiding.

MINUTES

The minutes of the meeting held 11/14/75 were approved as distributed.

LOUISIANA STATE MEDICAL SOCIETY

The letter of 10/6/75 from the subject organization and our subsequent request to the presidents of the county medical societies was reviewed. It was pointed out that only two responses had been received from the county societies to date. It was determined to await further responses before responding to the Louisiana letter.

MALPRACTICE ASSESSMENT

Mr. Robinson reported the status of the collection of the special assessment as of 1/2/76 is as follows:

County	Total Billed	Total Paid	Percent of Total Billed	Other Response	Total Accounted For	Percent of Total Billed
Apache	10	10	100.0		10	100.0
Cochise	32	25	78.1		25	78.1
Coconino	50	48	96	2	50	100.0
Gila	11	8	72.7		8	72.7
Graham	9	7	77.8	1	8	88.9
Greenlee	9	8	88.9	1	9	100.0
*Maricopa	1230	1149	93.4	20	1169	95.0
Mohave	23	20	87.0	1	21	91.3
Navajo	6	4	66.7	2	6	100.0
Pima	551	464	84.2	16	480	87.1
Pinal	40	31	77.5	4	35	87.5
Santa Cruz	8	8	100.0		8	100.0
Yavapai	40	37	92.5	1	38	95.0
Yuma	47	39	83.0	2	41	87.2
Total	2066	1858	89.9	50	1908	92.4

Net Collected to date $185,660.00 (includes 2 partial payments, 1—$50.00 and 1—$10.00)

* Includes 5 payments from members or future members not billed

STAFFING NEEDS

It was reported that because of the full time assignment of two and one half staff members to the Malpractice Insurance Crisis Committee work that other Association activities have slowed down. That an additional secretary, which was provided for in the 1976 budget, would be engaged and that certain committee staff assignments will be changed in an attempt to get things back on schedule.

CORRESPONDENCE

Howard Hyde, M.D.'s letter dated 1/3/76 was reviewed and suggestions made as to how to respond.

Meeting adjourned 7:08 p.m.

William E. Crisp, M.D., Secretary
by
Bruce E. Robinson
Executive Director

ANSWERS TO MEDICAL HISTORY QUIZ

A. 1. Doctor B. J. I. Irwin had served with the Army of Ohio in the "war between the States" created the first huge field hospital; capable of accomodating 2,500 patients at the battle of Shiloh. The medal of honor came much later when he lead a "relief expedition to Apache pass." Doctor Leonard Wood, reported to Fort Whipple June 29, 1885 and was assigned to Fort Huachuca and arrived there July 4, 1885. It was with Capt. Harry W. Lawton, Troop B, Fourth Cavalry that he served in the last Geranimo Campaign, and was recommended for the medal of honor.

A. 2. Doctor Charles Meyer, Born in Germany 1820, probably had very limited medical training, but rendered great service to his community as doctor and judge. "A chain gang, introduced by Meyer, did much to rid the streets of rubbish."

A. 3 Doctor George Dehietrius Kendall organized first volunteer fire department of Prescott, served on the school board, and in the ninth Territorial Legislature.

A. 4. Doctor James H. Taggart, a graduate of Rush Medical School came to Yuma and associated in practice with Doctor De Corse, (1874). George Angelo attacked Doctor Taggart March 1882. The doctor killed the attacker, himself, but was himself wounded, "the bullet penetrated his chest, punctured the diaphram and liver and exiting through the kidney." Doctor Taggart without the benefit of surgery, recovered!

A. 5. None other than the fabulous Doctor George Goodfellow, recorded his surgery performed July 13, 1881. "The wound of artery was one inch below and to the left of the umbilicus."

Four days after the patient was wounded he reported the laporatomy "the intestines matted togeter, . . . covered with purulent stinking lymph." Six holes in the intestines sutured, cavity carefully cleansed, and patient discharged August 19, 1881, about four weeks after surgery.

REFERENCE

1. Frances E. Quebbeman, Medicine in Territorial Arizona. Arizona Historical Foundation, Phoenix 1966.

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEDICAL EDUCATION.

ARIZONA STATE HOSPITAL, PHOENIX
GOOD SAMARITAN HOSPITAL, PHOENIX
PHOENIX INDIAN MEDICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEDICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARD.

MONTHLY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month
Plaza International, Tucson, AZ

SPONSOR: U of A Medical Center, Dept. of Radiology

CONTACT: Irwin M. Freundlich, M.D.
Arizona Medical Center
Dept. of Radiology
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

GASTROENTEROLOGY FOR CLINICIANS—1976

March 18-20, 1976
Adams Hotel, Phoenix, AZ

SPONSOR: Institute of Gastroenterology
Good Samaritan Hospital

CONTACT:
David C. H. Sun, M.D.
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

CLINICAL RECOGNITION AND MANAGEMENT OF HEART DISEASE — 1976

March 18-20, 1976
Arizona Medical Center

SPONSOR: U of A, College of Medicine and American College of Physicians

CONTACT: Registrar, Postgraduate Courses
American College of Physicians
4200 Pine Street
Philadelphia, Pa. 19104

Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

UPDATE: PRIMARY CARE — 1976

March 24-27, 1976
Arizona Medical Center

SPONSOR: U of A, College of Medicine

CONTACT: George D. Comerci, M.D.
Associate Dean
Continuing Medical Education
Arizona Medical Center
Tucson, AZ 85724

Approved for 24 required hours toward the ArMA Certificate in Continuing Medical Education.

UPDATE: PRIMARY CARE 1975

March 24-27, 1976
Arizona Medical Center, Tucson, AZ

SPONSOR: U of A College of Medicine
Department of Continuing Medical Education

CONTACT:
George D. Comerci, M.D.
1501 N. Campbell
Tucson, AZ 85724

Approved for 22 required hours toward the ArMA Certificate in Continuing Medical Education.

12th ANNUAL ARIZONA CHEST SYMPOSIUM

April 2-4, 1976
Double Tree Inn, Tucson, AZ

SPONSOR: University of Arizona/THEMP

CONTACT: Lynn M. Taussig, M.D.
Irvin Belzer, M.D.
Dept. of Pediatrics
Arizona Medical Center
Tucson, AZ 85724

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

ANNUAL ARIZONA CHEST SYMPOSIUM

April 2, 3, 4, 1976

Doubletree Inn, Tucson, AZ

SPONSOR: Tucson Medical Center
Arizona Medical Center

CONTACT:

Lynn Taussig, M.D.
Arizona Medical Center
University of Arizona
Tucson, AZ 85724

Approved for required hours toward the ArMA Certificate in Continuing Medical Education.

CLINICAL ASPECTS OF DIABETES MELLITUS

April 2, 1976

Camelback Inn, Scottsdale, AZ

SPONSOR: Arizona Diabetes Association, Inc.

CONTACT:
Philip Levy, M.D.
555 W. Catalina Dr., #11
Phoenix, AZ 85013

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

THE SPRING DRUG THERAPY SEMINAR

Friday, April 9, 1976

Arizona State Hospital

SPONSOR: Committee for Medical Staff Educational Conferences, Arizona State Hospital

CONTACT:
Eli Schlossberg, R.Ph.
Arizona State Hospital
2500 E. Van Buren
Phoenix, AZ 85008

Approved for 3 required hours toward the ArMA Certificate in Continuing Medical Education.

AN INTERSPECIALTY POSTGRADUATE SEMINAR REGARDING THE SPINE

April 12-14, 1976

SPONSOR: Maricopa County General Hospital

CONTACT: Austin R. Sandrock, M.D.
Dept. of Radiology
Maricopa County General Hospital
2601 E. Roosevelt
Phoenix, AZ 85008

Approved for 15 required hours toward the ArMA Certificate in Continuing Medical Education.

CONFERENCE ON NEONATAL-PERINATAL MEDICINE

April 21-23, 1976

Scottsdale Hilton, Scottsdale, AZ

SPONSOR: Perinatal Pediatrics Sect. of Dist. VIII of American Academy of Pediatrics; Good Samaritan Hospital, Dept. of Perinatal Education; and Dept. of Perinatology of The Children's Hospital, Denver, CO.

CONTACT:
Belton P. Meyer, M.D.
Dept. of Perinatal Education
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 14 required hours toward the ArMA Certificate in Continuing Medical Education.

85th ANNUAL MEETING ARIZONA MEDICAL ASSOCIATION, INC.

Safari Hotel, Scottsdale, AZ

April 29, 30, 1976

SPONSOR: Arizona Medical Association, University of Utah College of Medicine

CONTACT:
Arizona Medical Association
810 W. Bethany Home Road
Phoenix, AZ 85013

Approved for 14½ required hours toward the ArMA Certificate in Continuing Medical Education.

CLINICAL RECOGNITION AND MANAGEMENT OF HEART DISEASE 1976

March 18-20, 1976

University Hospital Auditorium, Tucson, AZ

SPONSOR: U of A College of Medicine

CONTACT: Frank I. Marcus, M.D.
Gordon A. Ewy, M.D.
Arizona Medical Center
Tucson, AZ 85724

Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wednesday, September - May
4:00 p.m. to 5:30 p.m.

Arizona Medical Center, Tucson, AZ, Rm. 8403

SPONSOR: Department of Psychiatry, U of A College of Medicine

CONTACT:
Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ per session toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital, Trek Room, Tucson, AZ

SPONSOR: Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice.

CONTACT:
Richard Silver, M.D., Dir.
Medical Education
Century Medical Plaza, Ste. 106
1701 West St. Mary's Road
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

PRINCIPLES OF MEDICAL PRACTICE MANAGEMENT FOR THE PRATICING PHYSICIAN

March 12-13, 1975
Hyatt Regency, Phoenix, AZ

SPONSOR: Arizona Medical Association

CONTACT:
Bruce E. Robinson, Executive Director
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

Approved for 14 required hours toward the ArMA Certificate in Continuing Medical Education.

PURGATORY MEDICAL-SKI SYMPOSIUM

Hypertension
March 12-13, 1976

SPONSOR: Albuquerque Chapter of AAFP

CONTACT:
David R. Holten, M.D.
8401 Constitution, N.E.
Albuquerque, New Mexico 87110

RECENT EXPERIENCE WITH A NEW SIMPLIFIED TECHNIQUE FOR PERCUTANEOUS TRANSHEPETIC CHOLANGIOGRAPHY

March 18, 1976
Arizona Medical Association

SPONSOR: Phoenix Society of Gastroenterology

CONTACT: Mrs. Mary Wood
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

TUMOR BOARD CONFERENCE

Every Friday at Noon

Kiva Conference Room
Phoenix Memorial Hospital

SPONSOR: Phoenix Memorial Hospital

CONTACT:
Howard Kimball, M.D.
333 West Thomas Road
Phoenix, AZ 85013

Approved for credit toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month

Kiva Conference Room
Phoenix Memorial Hospital

SPONSOR: Medical Staff of Memorial Hospital

CONTACT:

George Scharf, M.D.
1201 South 7th Avenue
Phoenix, AZ 85007

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

PULMONARY DISEASE GRAND ROUNDS

Mondays — 12 Noon

D-5 North Sonference Rm., Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Pulmonary Disease Teaching Service
Good Samaritan Hospital

CONTACT:
Bernard E. Levine, M.D.
Pulmonary Function Laboratory
Good Samaritan Hospital
1033 E. McDowell Hospital
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURGICAL GRAND ROUNDS
4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

Directory

THE ARIZONA MEDICAL ASSOCIATION, INC., ORGANIZED 1892, 810 W. BETHANY HOME ROAD, PHOENIX, ARIZONA 85013.

OFFICERS AND DIRECTORS — 1975-76

President—William C. Scott, M.D. U. of A., Dept. of OB-GYN, Tucson 85724
President-Elect—Edward Sattenspiel, M.D. 333 W. Thomas Rd., Phoenix 85013
Vice President—John F. Kahle, M.D. 715 N. Beaver, Flagstaff 86001
Secretary—William E. Crisp, M.D. 926 E. McDowell Rd., Phoenix 85006
Treasurer—Richard L. Dexter, M.D. P. O. Box 26926, Tucson 85726
Past President—William G. Payne, M.D. P. O. Box V, Tempe 85281
Editor-In-Chief—John W. Kennedy, M.D. 705 E. Tuckey Ln., Phoenix 85014
Delegate to AMA—Seymour I. Shapiro, M.D. 5402 E. Grant Rd., No. F, Tucson 85712
Delegate to AMA—Richard O. Elvin, M.D. 2210 S. Mill Ave., Tempe 85281
Delegate to AMA—W. Scott Chisholm, Jr., M.D. 1158 E. Missouri Ave., Phoenix 85014
Alt. Delegate to AMA—Arthur V. Dudley, Jr., M.D. 1601 N. Tucson Blvd., Tucson 85716
Alt. Delegate to AMA—John J. Standifer, M.D. 412 E. Oak St., Kingman 86401
Alt. Delegate to AMA—Patrick P. Moraca, M.D. 217 E. Virginia, Phoenix 85004
AMA Trustee—Daniel F. Cloud, M.D. 3411 N. 5th Ave., Phoenix 85013

DISTRICT DIRECTORS

Central District—Reginald J. M. Zeluff, M.D. 217 E. Virginia, Phoenix 85004
Central District—George L. Hoffmann, M.D. 438 W. 5th Place, Mesa 85201
Central District—James M. Hurley, M.D. 3143 N. 32nd St., Phoenix 85018
Central District—Wallace A. Reed, M.D. 1040 E. McDowell Rd., Phoenix 85006
Central District—Lawrence J. Shapiro, M.D. 550 W. Thomas Rd., Phoenix 85013
Northeastern District—Jack L. Mowrey, M.D. P. O. Box 887, Lakeside 85929
Northwestern District—Richard F. McDonald, M.D. 713 N. Beaver, Flagstaff 86001
Southeastern District—Edward R. Curtis, M.D. 503 5th Ave., Safford 85546
Southern District—Richard S. Armstrong, M.D. P. O. Box 12787, Tucson 85732
Southern District—Henry P. Lambacher, M.D. 2205 E. Hampton, Tucson 85719
Southern District—Vernor E. Lovett, M.D. 5402 E. Grant Rd., Tucson 85712
Southwestern District—Glen H. Walker, M.D. 291 W. Wilson, Coolidge 85228

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

President—Fernando de la Cueva, M.D. Pavo-135-306, Guadalajara, Jal. Mexico
President-Elect—Thomas H. Taber, Jr., M.D. 333 E. Virginia, Suite #212, Phoenix, AZ 85012
Vice-President—Pedro Gortazar Hijar, M.D. Guadalajara, Jal. Mexico
Secretary-USA—Schuyler V. Hilts, M.D. Tucson Medical Center, P.O. Box 6607, Tucson, AZ 85716
Secretary-Mexico—Felix Torres Herrera, M.D. Guadalajara, Jal. Mexico
Treasurer-USA—Lucy A. Vernetti, M.D. 333 W. Thomas Rd., Ste. 207, Phoenix, AZ 85013
Treasurer-Mexico—Franco Leopoldo C. Guadalajara, Jal. Mexico
Executive Secy.—USA—Mrs. Virginia E. Bryant 333 W. Thomas Rd., Ste. 207, Phoenix, AZ 85013
Executive Secy.—Mexico—Dr. Alfredo Patron Mazatlan, Sinoala, Mexico

COMMITTEES — 1975-76

ARTICLES OF INCORPORATION & BYLAWS: Charles E. Henderson, M.D., Chairman (Phoenix); Philip F. Dew, M.D., (Tucson); Arnold H. Dysterheft, M.D. (Lakeside); Paul B. Jarrett, M.D., (Phoenix); Clarence E. Yount, Jr., M.D.

BENEVOLENT AND LOAN FUND: Arthur V. Dudley, M.D., Chairman, (Tucson); George Adams, M.D., (Tucson); Richard L. Dexter, M.D. (Tucson); R. Lee Foster, M.D. (Phoenix); Edward J. Lefeber, M.D. (Mesa); Cecil C. Vaughn, Jr., M.D. (Phoenix); Carl E. Voldeng, M.D. (Phoenix).

FINANCE: Richard L. Dexter, M.D., Chairman (Tucson); William J. Dunn, M.D. (Phoenix); Herbert C. Erhart, Jr., M.D. (Springerville); James L. Grobe, M.D., (Phoenix); Charles C. Hedges, Jr., M.D. (Phoenix); Gerald Marshall, M.D. (Phoenix); Robert P. Purpura, M.D., (Tucson); Otto S. Shill, Jr., M.D. (Tempe); Seymour I. Shapiro, M.D. (Tucson); George Wallace, M.D. (Scottsdale).

GOVERNMENTAL SERVICES: Arthur D. Nelson, M.D., Chairman, (Scottsdale); John A. Ash, M.D., (Phoenix); Otto L. Bendheim, M.D., (Phoenix); Suzanne E. Dandoy, M.D., (Phoenix); Donn G. Duncan, M.D., (Tucson); Walter R. Eicher, M.D. (Chandler); Lloyd S. Epstein, M.D., (Tucson); John W. Heaton, M.D., (Phoenix); Charles Kalil, M.D. (Phoenix); Frank V. Keary, M.D., (Tucson); Louis C. Kossuth, M.D. (Phoenix); Joseph J. Likos, M.D. (Phoenix); Joseph L. Maicarelli, M.D., (Sun City); Dermont W. Melick, M.D., (Tucson); O. Melvin Phillips, M.D., (Scottsdale); Wallace A. Reed, M.D. (Phoenix); Helen M. Roberts, M.D. (Phoenix); Marvin C. Schneider, M.D., (Phoenix).

HEALTH MANPOWER: Louis C. Kossuth, M.D., Chairman (Phoenix); Casey D. Blitt, M.D., (Tucson); Bruce N. Curtis, M.D., (Safford); Alexander Kelter, M.D., (Tucson); Edward J. Lefeber, Jr., M.D. (Mesa); Roger A. Lueck, M.D., (Phoenix), Dermont W. Melick, M.D., (Tucson); John B. Miller, M.D., (Phoenix); Andrew W. Nichols, M.D., (Tucson); Robert St. John, M.D., (Phoenix); Manus R. Spanier, M.D. (Prescott); H. Stephens Thomas, M.D., (Phoenix); Jesse W. Tapp, Jr. M.D., (Tucson); Herbert L. Winograd, M.D., (Phoenix).

HISTORY & OBITUARIES: John W. Kennedy, M.D., Chairman (Phoenix); Francis J. Bean, M.D. (Tucson); Walter Brazie, M.D., (Kingman); C. Bland Giddings, M.D., (Mesa); John R. Green, M.D., (Phoenix); Abe I. Podolsky M.D. (Yuma); Jay L. Sitterley, M.D., (Flagstaff).

LEGISLATIVE: Edward Sattenspiel, M.D., Chairman, (Phoenix); Richard W. Abhuhl, M.D., (Phoenix); James E. Campbell, M.D., (Phoenix); John S. Carlson, M.D., (Phoenix); W. Scott Chisholm, Jr., M.C. (Phoenix); Sam C. Colachis, Jr., M.D. (Phoenix); Richard L. Collins, M.D., (Scottsdale) Donald F. Griess, M.D., (Tucson); Louis Hirsch, M.D., (Tucson); Robert D. Hedgell, M.D., (Prescott); John P. Holbrook, M.D., (Tucson); Gerald Marshall, M.D., (Phoenix); Richard McGill, D.O., (Phoenix); Gerald F. McNally, M.D., (Prescott); Donald R. Miles, M.D., (Phoenix); R. Michael O'Hara, M.D., (Phoenix); Robert J. Oliver, III, M.D., (Tucson); Ratibor Patovich, M.D., (Phoenix); O. Melvin Phillips, M.D., (Scottsdle); Wilred M. Potter, M.D., (Scottsdale); Paul L. Schnur, M.D., (Tucson); Berton Siegel, D.O., (Phoenix); John Vosskuhler, M.D., (Flagstaff); Dennis Weiland, M.D., (Scottsdale).

MATERNAL & CHILD HEALTH CARE: Raymond J. Jennett, M.D., Chairman (Phoenix); Frederic W. Baum, M.D. (Tempe); Walter B. Cherny M.D., (Phoenix); C. Donald Christian, M.D. (Tucson); Warren A. Colton, Jr., M.D., (Tempe); William J. R. Daily, M.D., (Phoenix); Jack H. Demlow, M.D., (Tucson); Glenn M. Friedman, M.D. (Scottsdale); Harlan R. Giles, M.D., (Tucson); Walter K. Kippard III, M.D. (Phoenix); Belton P. Meyer, M.D., (Phoenix); William J. Moore, M.D., (Phoenix); William G. Payne, M.D., (Tempe); David Pent, M.D., (Phoenix); Hermann S. Rhu, Jr., M.D., (tucson); Paul W. Whitmore, D.O., (Phoenix).

MEDICAL ECONOMICS: Robert P. Purpura, M.D., Chairman (Tucson); Richard S. Armstrong, M.D., (Tucson); Albert C. Asendorf, M.D., (Phoenix); Chester G. Bennett, M.D., (Phoenix); Avi Ben-Ora, M.D., (Scottsdale); Charles M. Bergschneider, M.D., (Scottsdale); Arthur M. Brandt, M.D., (Tucson); Sam C. Colachis, Jr., M.D. (Phoenix); Charles F. Dalton, M.D., (Phoenix); George I. Hoffmann, M.D., (Mesa); Frederick W. Jensen, Jr., M.D., (Phoenix); John F. Kahle, M.D., (Flagstaff); Howard N. Kandell, M.D., (Phoenix); Patrick P. Moraca, M.D., (Phoenix); Paul L. Schnur, M.D., (Tucson); George Seibin, M.D., (Phoenix); Richard W. Switzer, M.D., (Tucson); Burton E. Weissman, M.D., (Phoenix); Reginald J. M. Zeluff, M.D., (Phoenix).

MEDICAL EDUCATION: Robert E. T. Stark, M.D., Chairman (Phoenix); James E. Brady, Jr., M.D., (Tucson); Daniel B. Carroll, M.D., (Phoenix); Melvin L. Cohen, M.D., (Phoenix); George D. Comerci, M.D., (Tucson); David J. Crosby, M.D., (Phoenix); Kenneth A. Dregseth, M.D., (Sierra Vista); Francis T. Flood, M.D., (Phoenix); Harry W. Hale, Jr., M.D. (Phoenix); Robert E. Hastings, Jr., M.D., (Tucson); M. Wayne Heine, M.D., (Tucson); Raymond J. Jennett, M.D. (Phoenix); Howard N. Kandell, M.D., (Phoenix); Jack M. Layton, M.D., (Tucson); Laurence R. Mansur, M.D., (Safford); William F. Sheely, M.D., (Phoenix); Lawrence Z. Stern, M.D., (Tucson); Jesse W. Tapp, Jr., M.D., (Tucson); Aston B. Taylor, M.D., (Phoenix); Albert G. Wagner, M.D. (Phoenix).

OCCUPATIONAL HEALTH: Joseph M. Hughes, M.D., Chairman, (Phoenix); Floyd K. Berk, M.D., (Tucson); Richard Besserman, M.D., (Phoenix); Earl M. Best, M.D., (Phoenix); Sheldon Davidson, M.D., (Phoenix); Walter V. Edwards, M.D., (Phoenix); Robert V. Horan, M.D., (Morenci); Robert B. Leonard, M.D., (Phoenix); Florian R. Rabe, M.D. (Scottsdale); Eugene J. Ryan, M.D. (Phoenix); William C. Trier, M.D. (Tucson); Maier Tuchler, M.D. (Phoenix); Willis A. Warner, M.D., (Phoenix).

PHYSICIAN REHABILITATION: Richard E. H. Duisberg, M.D., Chairman (Phoenix); John Bartness, M.D., (Phoenix); Otto L. Bendheim, M.D., (Phoenix); William E. Bishop, M.D., (Globe); John T. Clymer, M.D., (Tucson); Donald L. Damstra, M.D. (Phoenix); Bernard M. Kuhr, M.D., (Tucson); Laurence M. Linkner, M.D., (Phoenix); Walter B. Tomlinson, M.D. (Elgin); Karl E. Voldeng, M.D., (Phoenix); Eleanor A. Waskow, M.D. (Phoenix).

MEMBERS ARE URGED TO BRING MATTERS ON INTEREST AND CONCERN TO THE CHAIRMEN OF THE APPROPRIATE COMMITTEE OR TO THE ATTENTION OF ANY MEMBER OF THE BOARD OF DIRECTORS.

AN INVOLVED MEMBERSHIP IS THE BASIS FOR AN EFFECTIVE ASSOCIATION.

PROFESSIONAL: Robert S. Ganelin, M.D., Chairman, (Phoenix); Paul M Bindelgas, M.D., (Phoenix); Paul B. Borgeson, M.D., (Phoenix); John A. Bruner, M.D., (Phoenix); L. Philip Carter, M.D., (Phoenix); James L. Grohe, M.D. (Phoenix); Joseph W. Hanss, Jr., M.D., (Phoenix); James M. Hurley, M.D., (Phoenix); Helen Johnson, M.D., (Tucson); Laurence M. Linkner, M.D., (Phoenix); William G. Payne, M.D., (Tempe); Edward Sattenspiel, M.D., (Phoenix); Donald F. Schaller, M.D., (Phoenix); George A. Spendlove, M.D., (Phoenix); Neil O. Ward, M.D., (Phoenix).

PUBLIC RELATIONS: Selma E. Targovnik, M.D., Chairperson (Phoenix); W. David Ben-Asher, M.D., (Tucson); E. Fredrick Bloemker, M.D., (Phoenix); J. Walter Brock, M.D., (Scottsdale); Ronald L. Christ, M.D., (Yuma); Julian DeVries, (Phoenix); Edward B. Grothaus, M.D., (Sierra Vista); Robert A. Johnson, M.D., (Phoenix); Robert E. Kelling, Sr., M.D., (Ajo); Irving M. Pallin, M.D., (Sun City); William Russell, Jr., M.D., (Phoenix); Morton S Thomas III, M.D., (Wickenburg).

PUBLISHING: John W. Kennedy, M.D., Chairman, (Phoenix); Walter V. Edwards, M.D., (Phoenix); Gerald Kaplan, M.D., (Phoenix); George Lastnick, M.D., (Sun City); William B. McGrath, M.D., (Phoenix); David Pent, M.D., (Phoenix); Michael M. Schreiber, M.D., (Tucson); David C. H. Sun, M.D. (Phoenix).

SCIENTIFIC ASSEMBLY: Milton S. Dworin, M.D., Chairman, (Tucson); Merrill M. Aheshaus, M.D., (Flagstaff); Suresh C. Anand, M.D. (Phoenix); Floyd K. Berk, M.D., (Tucson); Thomas E. Bittker, M.D., (Phoenix); W. Scott Chisholm, M.D., (Phoenix); Vicent A. Fulginiti, M.D., (Tucson); Otto Gambacorta, M.D., (Tucson); Jerome Gerendasy, M.D., (Mesa); Laurence M. Haas, M.D., (Tucson); Timothy R. Harrington, M.D., (Phoenix); Clifford J. Harris, Jr., M.D., (Mesa); Thomas F. Hartley, M.D., (Phoenix); Wayne H. Heine, M.D., (Tucson); Thomas S. Henry, M.D., (Flagstaff); James M. Hurley, M.D., (Phoenix); Mark M. Kattchner, M.D., (Tucson); Norman N. Komar, M.D., (Tucson); Eugene Lethsohn, M.D., (Phoenix); Philip Levy, M.D., (Phoenix); William S. Nevin, M.D., (Tucson); Neopito L. Robles, M.D., (Tucson); Richard A. Silver, M.D., (Tucson); Donald P. Speer, M.D., (Tucson); Louis S. San, M.D., (Phoenix); Wilhur C. Voss, M.D., (Tucson); Donald J. Ziehm, M.D., (Phoenix).

COUNTY MEDICAL SOCIETY OFFICERS, 1976-77

APACHE: Robert D. Martin, M.D., President, Prof. Plaza Bldg., Pinetop, 85835; Johannes J. Heynekamp, M.D., Secy., White Mountain Community Hospital, Springerville, 85938.

COCHISE: Joroge Gaytan, M.D., President, 640 Kent St., Douglas, 85607; Robert H. Page, M.D., Secy., 640 Kent St., Douglas, 85607.

COCONINO: Joseph R. Reno, M.D., President, Box 310, Flagstaff, C. Herbert Fredell, M.D., Secy., 120 Fine St., Flagstaff, 86001.

GILA: B. J. Collopy, M.D., President, Miami Inspiration Clinic, 85539; David B. Gilbert, M.D., Secy., Box 1030, Payson, 85541.

GRAHAM: Laurence R. Mansur, M.D., President, 2016 W. 16th St., Safford, 85546.

GREENLEE: Robert V. Horan, M.D., President, Morenci Hospital, Morenci, 85540; Lyle H. Boyea, M.D., Secy., Morenci Hospital, Morenci, 85540.

MARICOPA: William R. Meyers, M.D., President; Max L. Wertz, M.D., Secy. (Society address: 2025 N. Central Ave., Phoenix, 85004).

MOHAVE: Earl S. Gilbert, M.D., President, Mohave General Hospital, Kingman, 86401; Irving S. Yeung, M.D., Mohave General Hospital, Kingman, 86401.

NAVAJO: Robert J. Haley, III, M.D., President, P.O. Box 700, Holbrook, 86025; Harry Beckwith, M.D., Secy., East 2nd & Colorado Ave., Winslow, 86047.

PIMA: M. David Ben-Asher, M.D., President; Stuart W. Westfall, M.D., Secy., (Society address): 2555 E. Adams St., Tucson, 85716).

PINAL: Howard Hyde, M.D., President, 1023 E. Florence, Casa Grande, 85222; Hugh A. Richmond, M.D., Secy., 900 E. Florence Blvd., Casa Grande, 85222.

SANTA CRUZ: Enrique Suarz, M.D., President, 711 Morley Ave., Nogales, 85621; Charles S. Smith, M.D., Secy., Box 1382, Nogales, 85621.

YAVAPAI: David C. Duncan, M.D., President, 801 Miller Valley Rd., Prescott, 86301; Ronald Gardner, M.D., Secy., 1000 Willow Creek Rd., Prescott, 86301.

YUMA: William Hultgen, M.D., President, 423 W. 8th St., Yuma, 85364; J. Frank Martin, M.D., Secy., 1150 W. 24th St., Yuma, 85364.

WOMAN'S AUXILIARY TO THE ARIZONA MEDICAL ASSOCIATION 1975-76

PRESIDENT Mrs. Howard W. Kimball (Ella)
414 W. Northview, Phoenix 85021
PRESIDENT-ELECT Mrs. George I. Hoffmann (Julie)
540 Mesa Vista Lane, Mesa 85203
1ST VICE PRESIDENT Mrs. Joseph Reno (Maude)
621 W. Beal Rd., Flagstaff 86001
2ND VICE PRESIDENT Mrs. Arnold Hollander (Carol)
7545 Sabino Vista Dr., Tucson 85715
RECORDING SECY Mrs. Albert Asendorf (Donna)
502 E. Claremont St., Phoenix 85012
TREASURER Mrs. Thurman Leonard (Ann)
2261 E. Glenn, Tucson 85719
DIRECTOR 1974-76 Mrs. Robert Delph (Grace)
600 Robin Lane, No. 24, Yuma 85364
DIRECTOR 1975-76 Mrs. Raymond Vaaler (Ann)
3624 N. 54th Court, Phoenix 85018
DIRECTOR 1975-77 Mrs. Albert Wagner (Helen)
3216 E. Meadowbrook, Phoenix 85018
CHAPLAIN Mrs. Sam M. Mackoff (Selma)
5343 N. 23rd St. Phoenix, 85016
CORRESP SECY Mrs. Charles Kalil (Ylma)
1300 E. Missouri, Phoenix 85014
HISTORIAN Mrs. Melvin Phillips (Jean)
1001 Norris Rd., Prescott 86301
PARLIAMENTARIAN Mrs. Lewis S. Winter (Jean)
1714 E. Rose Lane, Phoenix 85016

STANDING AND SPECIAL COMMITTEES

AMA-ERF Mrs. Earl Gilbert (Vicki)
3010 Van Martier Court, Kingman 86401
BYLAWS, PROCEDURES, GUIDELINES Mrs. Paul Jarrett (Beverley)
501 E. Pasadena, Phoenix, 85012
COMMUNICATIONS Mrs. Lynn Newman (Joyce)
4531 W. Seldon Lane, Glendale 85302
COMMUNITY HEALTH Mrs. Gordon Tekell (Pat)
1391 Gateway Ave., Yuma 85364
CONVENTION Mrs. Ronald Johnson (Terry)
532 W. Northview, Phoenix 85021
FAMILY HEALTH Mrs. Edward Bryne-Quinn (Ruth)
7081 E. Opatas Place, Tucson 85715
FINANCE Mrs. John Hayes (Shirley)
717 W. El Camino, Phoenix 85021
GEMS Mrs. Ronald Kolker (Ruth)
6211 Camino Almonte, Tucson 85718
HAMER EDUCATION LOAN FUND Mrs. William Bishop (Marion)
211 W. 3rd, Globe 85501
HEALTH EDUCATION Mrs. Charles C. Hedges, Jr., (Dottie)
5227 E. Fresno Dr., Phoenix 85018
HEALTH MANPOWER Mrs. Luis Tan (Mary Jo)
3510 E. Nita Rd., Paradise Valley 85253
HOSTESS Mrs. Rex Vauhel
117 W. Glenn Dr., Phoenix 85021
INTERNATIONAL HEALTH Mrs. J. O. Soderstrom (Juanita)
805 Prescott Heights Dr., Prescott 86301
LEGISLATION Mrs. John A. Ash (Agnes)
5818 N. 3rd Ave., Phoenix 85013
MEMBERSHIP Mrs. Joseph Reno (Maude)
621 W. Beal Rd., Flagstaff 86001
PROGRAM Mrs. Arnod Hollander (Carol)
7545 Sabino Vista Dr., Tucson 85715

YOU WORKED HARD



FOR THAT DIPLOMA..

why not have it laminated?

it will last a lifetime....

THE PLAQUE SHOP

Wood plaques — Ready to hang
No glass to break — Moisture proof
Dirt proof — Impressive.
Our plaques are manufactured locally.

arizona laminating service inc

7231 EAST FIRST AVENUE •
SCOTTSDALE, ARIZONA 85251 •
(602) 945-9338

MEDICAL BOOKSTORE



The only bookstore in Arizona devoted exclusively to books for the medical profession.

MEDICAL BOOKSTORE
College of Medicine
University of Arizona
Tucson, Arizona 85724
Phone: 882-6669

HOBBY HORSE RANCH SCHOOL

A School For Exceptional Children

The Hobby Horse Ranch School is both home and school for a small group of children. It welcomes the child who is mentally retarded and physically handicapped as well as the backward child who suffers no physical handicap.

The Hobby Horse Ranch School is a branch of Fairview School in Fishkill, New York which was established in 1936.

Directors: Blanche C. Lightowler, B.A.
Matthew W. Lightowler

P.O.B. 44, Cortaro, Ariz.



Emergency — our business

Air Evac — serving all Arizonans — can be ordered by any physician anytime to transport a patient anywhere. Medically trained flight crew is airborne in 30 minutes.

(602) 254-7150

AIR EVAC
Samaritan Health Service
Phoenix, Arizona

Medical Center X-Ray and Clinical Laboratory

1313 North 2nd Street
Phoenix, Arizona
Phone 258-3484

CLINICAL PATHOLOGY

DIAGNOSTIC X-RAY

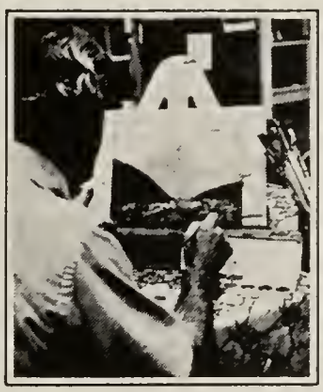
PORTABLE X-RAY AND E.K.G. SERVICE

ELECTROCARDIOGRAPHY

R. Lee Foster, M.D., F.A.C.R., F.A.C.P., Director

Diplomates of American Board of Radiology

George B. Kent, Jr., M.D., Consultant Pathologist





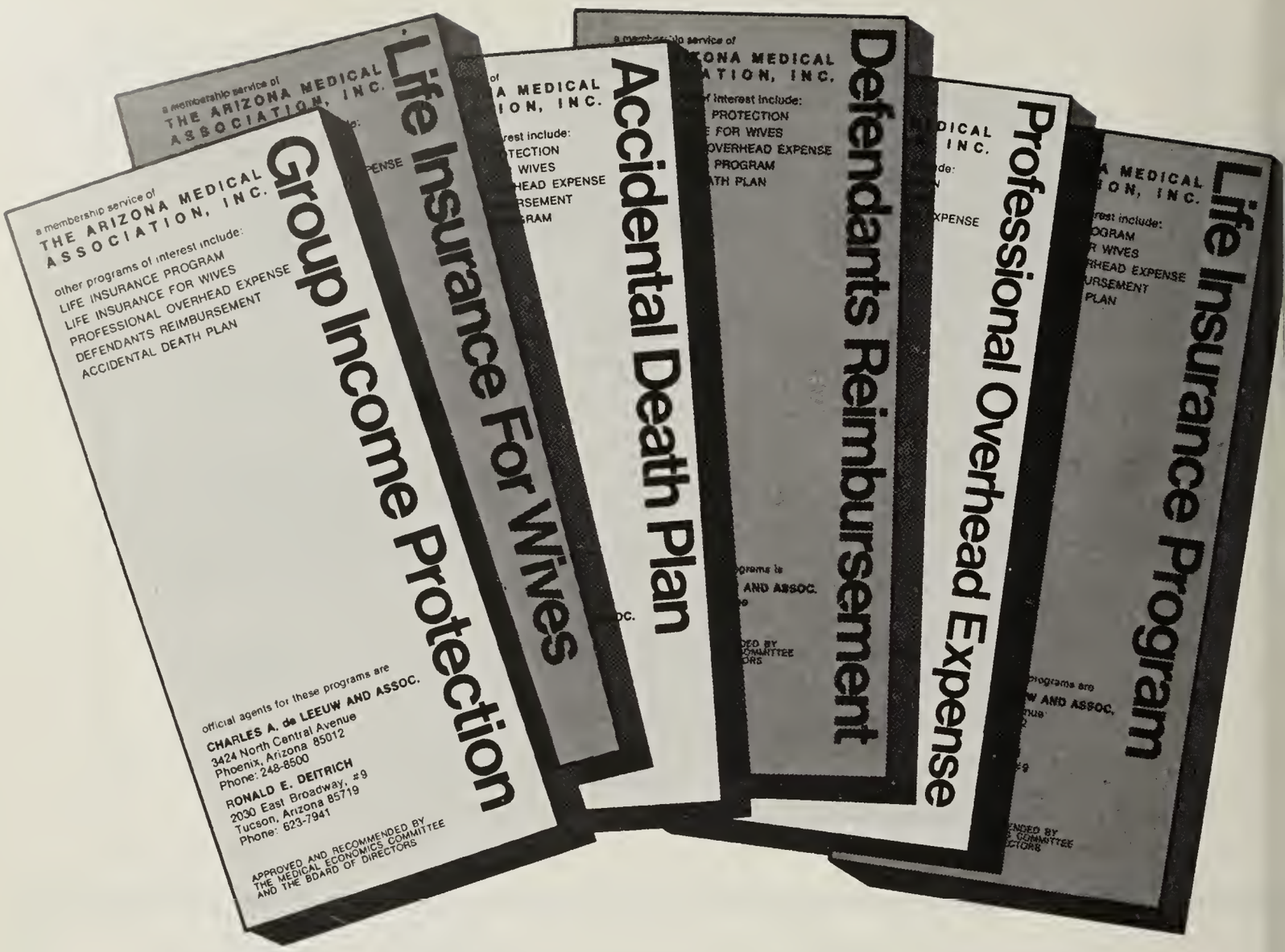

a structured program for the patient.

Every detail for the patient's well-being is carefully planned and evaluated in conjunction with his personal physician

CH

camelback hospital
5055 north thirty-fourth street
phoenix, arizona 85018

A NON-PROFIT COMMUNITY PSYCHIATRIC HOSPITAL



Quality protection
Association approved & recommended

1. These 6 plans were especially created for the medical profession under the auspices of The Arizona Medical Association as a unique membership service. Approved by the Medical Economics Committee.

2. In addition to excellence of coverage there is supervision and control by your Association.

3. In many instances...a substantial saving in required premiums.

4. Inquiries may be directed to the Association office or to the licensed resident agents.

THE ARIZONA MEDICAL ASSOCIATION, INC. ORGANIZED 1892 INCORPORATED 1950 ARIZONA

Charles A. deLeeuw and Assoc.
3424 N. Central Ave.
Phoenix, Az. 85012
248-8500

Ronald Deitrich
2030 E. Broadway, Suite 9
Tucson, Az. 85719
792-1020



These shingles make a great building

Camelback Professional Building

5051 N. 34th STREET
PHOENIX, ARIZONA 85018
(602) 955-6200

general psychiatry / child psychiatry / psychoanalysis, clinical psychology / and family counseling.

MEETING NOTICE

Phoenix Medical History Club

March 29, 1976

7:30 p.m.

Arizona Medical Association

810 W. Bethany Home Rd.

Phoenix, AZ 85013

Drygulch Jake — Speaker

For Further Information Contact

Clifford E. Ernst, M.D.

909 E. Brill St.

Phoenix, AZ

85015

ArMA OFFERS A NEW INSURANCE FORM FOR ALL CLAIMS

An order today will stop the confusion of multiple insurance forms
Sample available on request

COST: $1.75 per hundred

To: Arizona Medical Association
810 West Bethany Home Rd.
Phoenix, AZ 85013

Please send me hundred approved insurance forms costing $1.75 per hundred.

NAME

Address

Bill me ☐ Payment Enclosed ☐

Pharmacy Directory

FAIRMONT PHARMACY

AN INDEPENDENT
WITH
CHAIN STORE PRICES

3231 East McDowell Road, Phoenix, Arizona

BRidge 5-5719 **Free Delivery**

FREE RADIO EQUIPPED DELIVERY

In Scottsdale call

Lute's Scottsdale Pharmacy

For

PRESCRIPTIONS

3904 N. Scottsdale Rd. 945-8420 - 945-8429

Next to the 1st National Bank

Open 'til 10 p.m. daily — 9 p.m. Sundays

FREE DELIVERY

CALL

254-2606

IF BUSY CALL 252-1573

"Satisfying Customers Since 1920"

- COSMETICS
- SUNDRIES
- SODA BAR
- LIQUOR



MacALPINE'S

DRUG STORE

THE *Rexall* STORE

2303 N. 7th ST.

DON BRISCOE – PHARMACIST

Classified

DANNY T. SEIVERT
INSURANCE

Professional Programs for Professional Men

70 E. Mitchell Dr., Suite 6
Phoenix, Arizona 85012
263-9090

JOHNSON-BOZZANI
PORSCHE | AUDI

1976 911, NEW 912E, 914 NOW IN STOCK

DAVE NEAL
SALES & LEASING



320 N. CENTRAL AVENUE
PHOENIX, ARIZONA 85004
PHONE (602) 253-1161



Medical Transcription
For Physicians and
Hospitals

MULLEN MEDICAL SERVICE, INC.

4445 North 36th Street
Phoenix, Arizona 85018
Telephone (602) 955-0763

DOCTORS' CENTRAL
DIRECTORY

Helen M. Barrasso, R. N., Director

For Emergencies or in Absence of Your Doctor

CALL 327-7471

At Your Service 24 Hours Daily

2807 East Speedway Tucson, Arizona

"Established 1932"

MICRO-BILLING

The burden-free, low-cost statement service that saves you time, space and money. Positively accurate billings go on time every month regardless of work load, illness, or vacations. No contract to sign, equipment to purchase, or change required to existing posting procedures. Micro-billing also provides positive protection against fire, theft or damage to your valuable records. Call 265-4729, or write American Billing Corp., 4014 N. 7th Street, Phoenix, AZ 85014.

ALLERGY-IMMUNOLOGY FELLOWSHIP

The College of Medicine of the University of Arizona is pleased to announce a fellowship opportunity in Allergy and Clinical Immunology for a physician who is board eligible in Internal Medicine or Pediatrics in July, 1976. A two-year program would include clinical and research training. For further information please contact Jacob L. Pinnas, M.D., Arizona Medical Center, University of Arizona School of Medicine, Tucson, AZ 85724.

SHARE M.D. OFFICE

Tempe surgeon has contemporary oversized office designed for two M.D.'s. . . . Will sublease remainder for low volume type practice in another speciaty. Shalimar Medical Center, Tempe, in view of Desert Samaritan Hospital. Call 838-3130.

FOR LEASE

Office for lease, available for immediate occupany. 825 Sq. Ft., fully decorated. "Century Medical Plaza," 1701 W. St. Mary's Road #171. Call 623-5479.

SHARE NEW OFFICE

Established surgical sub-specialist has deluxe new office designed for two M.D.'s by Tucson Medical Center Hospital. Will sub-lease separate examining rooms to another M.D., sharing office facilities and expenses. 5200 E. Grant Road, Suite 101, Tucson. Phone: 881-8544.

FOR LEASE

New Medical Center across from Yavapai County Hospital in mile high Prescott, Arizona. Only 2 suites remaining. Terrific opportunity for OTO or Dentist. Good lease terms available with doctor owner.

POSITION AVAILABLE

Texas. Career-oriented ER physicians wanted by ACEPT-oriented Southwest group. Flexible work schedules, competitive renumeration and malpractice coverage. Contact: S. Powers, M.D. 2410 S. Voss, Ste. G116, Houston, Texas 77057 (713) 790-1420. Ref. ad. A.

POSITION AVAILABLE

Full-time ER Physician—for modern, expanding, fully-accredited 467-bed regional medical center with low malpractice ins. rates, salary and fringes negotiable, progressive staff with specialty back up. Excellent schools, college facilities, cultural activities, recreational activities. Contact Dan S. Wilford, Adm., North Mississippi Medical Center, 830 South Gloster St., Tupelo, MS., 38801. (601) 842-3632.

Index to Advertisers

American Billing Corp. 250

Arizona Laminating 246

Armour Pharmaceuticals 170

Burroughs Wellcome
Empirin Compound 189

Camelback Hospital 247

Camelback Professional Bldg. 249

Classified 250, 251

Doctors Central Directory 250

Eli Lilly
Kefzol 180

HBA Life Insurance 177

Hobby Horse Ranch School 246

Johnson Bozzani 250

Medical Bookstore 246

Medical Business Consultants 174

Medical Center X-Ray & Clinical Labs 247

Mullen Medical Service 250

National Casualty Co. 248

Pharmacy Directory 165

Pharmaceutical Manuf. Assoc. 172, 173

Roche Labs
Valium Second Cover
Librium Third Cover
Librium Fourth Cover

Roerig & Co.
Antivert 185

Roswell Bookbinding 174

Rural Health Conference 176

Samaritan Health Service 246

Smith, Kline & French
Dyazide 186

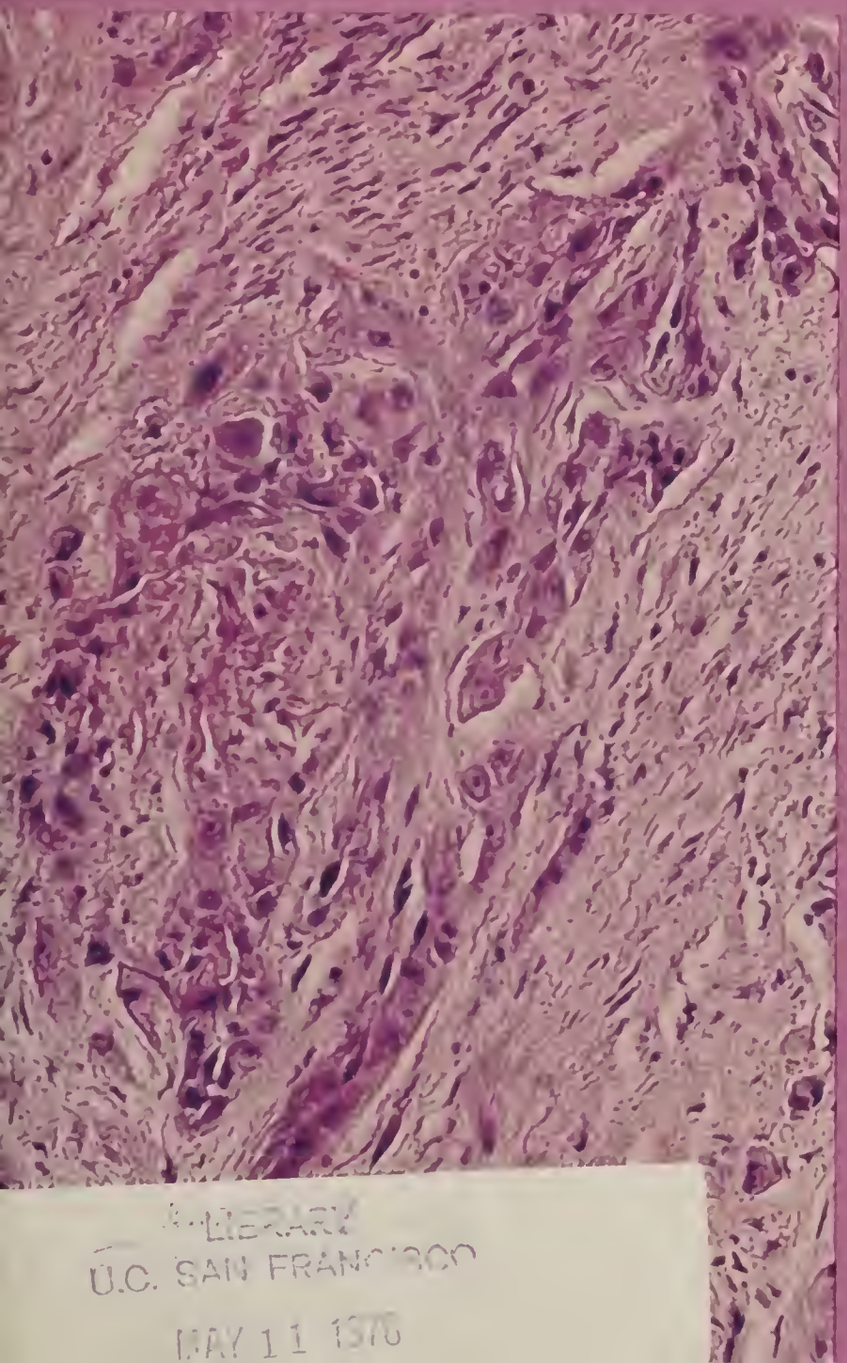
Danny T. Sievert
Insurance 250

United Bank 175

Valley National Bank 178

Westwood Pharmaceuticals
PreSun 190

ARIZONA MEDICINE



LIBRARY
U.C. SAN FRANCISCO
MAY 11 1970

Both often



Predominant psychoneurotic anxiety

Associated depressive symptoms

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in freque and/or severity of grand mal seizures m require increased dosage of standard a convulsant medication; abrupt withdra may be associated with temporary in- crease in frequency and/or severity of seizures. Advise against simultaneous i gestion of alcohol and other CNS depre sants. Withdrawal symptoms (similar t those with barbiturates and alcohol) ha occurred following abrupt discontinua (convulsions, tremor, abdominal and m cle cramps, vomiting and sweating). K addiction-prone individuals under care

respond to one

According to her major symptoms, she is a psychoneurotic patient with severe anxiety. But according to the description she gives of her feelings, part of the problem may sound like depression. This is because her problem, although primarily one of excessive anxiety, is often accompanied by depressive symptomatology. Valium (diazepam) can provide relief for both—as the excessive anxiety is relieved, the depressive symptoms associated with it are also often relieved.

There are other advantages in using Valium for the management of psychoneurotic anxiety with secondary depressive symptoms: the psychotherapeutic effect of Valium is pronounced and rapid. This means that improvement is usually apparent in the patient within a few days rather than in a week or two, although it may take longer in some patients. In addition, Valium (diazepam) is generally well tolerated; as with most CNS-acting agents, caution patients against hazardous occupations requiring complete mental alertness.

Also, because the psychoneurotic patient's symptoms are often intensified at bedtime, Valium can offer an additional benefit. An *h.s.* dose added to the *b.i.d.* or *t.i.d.* treatment regimen can relieve the excessive anxiety and associated depressive symptoms and thus encourage a more restful night's sleep.



Valium®
(diazepam) Ⓡ IV

2-mg, 5-mg, 10-mg scored tablets

in psychoneurotic
anxiety states
with associated
depressive symptoms

surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

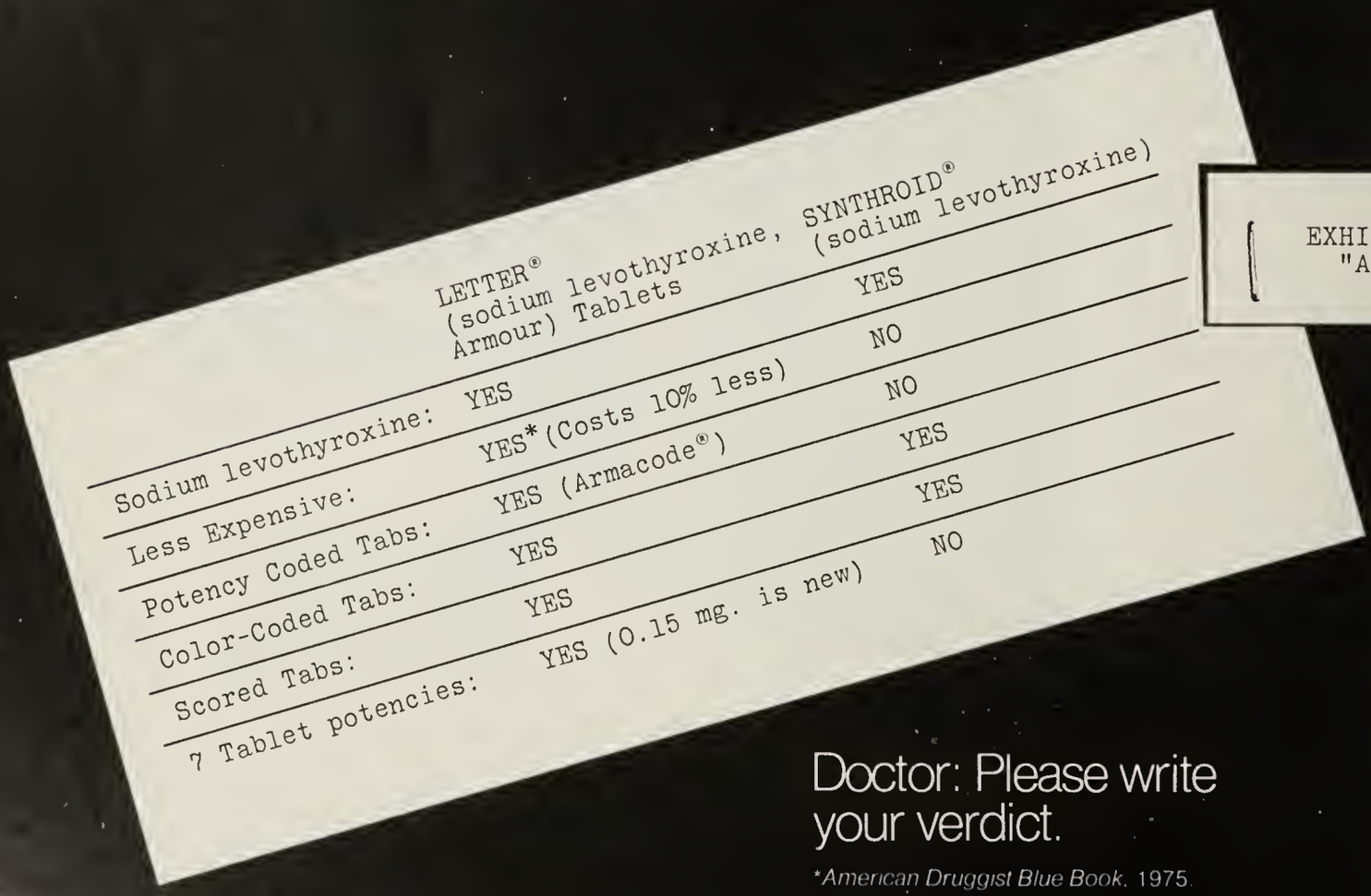
Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

YOU ARE THE JUDGE:

the evidence is in.



	LETTER® (sodium levothyroxine, Armour) Tablets	SYNTHROID® (sodium levothyroxine)
Sodium levothyroxine:	YES	YES
Less Expensive:	YES* (Costs 10% less)	NO
Potency Coded Tabs:	YES (Armacode®)	NO
Color-Coded Tabs:	YES	YES
Scored Tabs:	YES	YES
7 Tablet potencies:	YES (0.15 mg. is new)	NO

EXHIBIT "A"

Doctor: Please write your verdict.

*American Druggist Blue Book, 1975.

LETTER®

(Sodium Levothyroxine, Armour) Tablets

Armour Pharmaceutical Company, Phoenix, Arizona 85077

APRIL 1976/Vol. 33, No. 4

ARIZONA MEDICINE

JOURNAL OF ARIZONA MEDICAL ASSOCIATION • MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

EDITOR'S PAGE

A PROGRESS NOTE '76 STYLE, 288
John W. Kennedy, M.D.

DEAN'S PAGE

A LONGITUDINAL EPIDEMIOLOGICAL STUDY OF RESPIRATORY DISEASES, 289
Neal A. Vanselow, M.D.

EDITORIAL

HYSTERIA, 309
William B. McGrath, M.D.

DIRECTORY

Medical Society of the United States and Mexico, 330

Sociedad Medica de Estados Unidos do Northe America y Mexico, 330

Officers and Committees, 330

Index to Advertisers, 336

COVER

We are pleased to feature, in the Original Articles Section, a portion of the papers presented at the Arizona Regional Meeting of the American College of Physicians held Oct. 31-Nov. 1, 1975 in Tucson, Arizona.

Published monthly by The Arizona Medical Association, Inc., with offices at 810 W Bethany Home Rd., Phoenix, Arizona 85013. Subscription $10 a year, single copy $1.00. Second class postage paid at Phoenix, Arizona, and at additional mailing offices.

ORIGINAL ARTICLES

COEXISTENT BRONCHOGENIC CARCINOMA AND PULMONARY COCCIDIOIDOMYCOSIS, 267
Jayanta K. Chowdury, M.D., FCCP
Judith Ann Pester, M.D.

INSULINOMAS: NEW AIDS IN DIAGNOSIS
Marshall B. Block, M.D.
Laurance B. Nilsen, M.D.
William F. Stewart, M.D.

ADRIAMYCIN HEART DISEASE, 274
Gordon A. Ewy, M.D.
Stephen Jones, M.D.
Bertron M. Groves, M.D.

SEARCH FOR NEW AGENTS IN ARTHRITIS THERAPY, 278
Sanford H. Roth, M.D.

DIAGNOSIS AND MANAGEMENT OF ETHANOL WITHDRAWAL SYNDROMES, 282
Terry A Rustin, M.D.

OBSTETRICS AND GYNECOLOGY

THE LOW BIRTHWEIGHT INFANT—A FOLLOWUP, 290
E. O. R. Reynold, M.D.

CLINICAL ONCOLOGY IN ARIZONA

RADIONUCLIDES IN ONCOLOGY, 297
Stephen E. Jones, M.D.

LETTERS, LABORATORY VS CLINICAL INVESTIGATION OF CANCER, 300
Arline C. Schmeer, O.P., Ph.D.
Paul H. Duffy, M.D., FACP

SEMINARS IN CHEST MEDICINE

SURGERY AND THE PATIENT WITH LUNG DISEASE, 301
Robert J. Clark, M.D.

ENDOCRINOLOGY AND METABOLISM

DIABETIC KETOACIDOSIS: HIGH VERSUS LOW-DOSE INSULIN THERAPY, 304
Marshall B. Block, M.D.

DEPARTMENT OF HEALTH SERVICES

VECTOR BORNE DISEASE CONTROL IN ARIZONA, 306
Suzanne Dandoy, M.D.

RADIOLOGY CASE OF THE MONTH

CASE NUMBER 9
John C. Bjelland, M.D.
Irwin M. Freundlich, M.D.

EDITORIAL

HYSTERIA, 309
William B. McGrath, M.D.

TOPICS OF CURRENT MEDICAL INTEREST

NEW MEMBERS OF ARMA, 310

ARMA MEDICAL HISTORY

HISTORY OF TUCSON MEDICAL CENTER, 311
Reba Grubb

BOOK REVIEW, 314

LETTERS TO EDITOR, 314

ARMA REPORTS, 315

FUTURE MEETINGS, 320



Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct non-therapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.

P·M·A
Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D. C. 20005

PRACTICE MANAGEMENT WILL SAVE YOU WORRY AND EXPENSE

Every medical practice *needs* a business manager—but most doctors are so busy serving their patients that they don't have the time to set up an office that runs smoothly and profitably. I can help.



A Naval Academy graduate, I have 30 years of training and experience in business law, electronics, personnel training, and property management. My associates were major consultants for NASA's medical facility for Apollo missions.

You will benefit from our knowledge of office staffing and equipment, fee structure, billing collections, office partnerships and liability protection.

Let us survey your procedures and show you how to save time, worry and expense. First talk at no obligation to you.

MEDICAL BUSINESS CONSULTANTS
Philip Kwart, *Director*
3225 North Central Avenue, Suite 300-B
Phoenix, Arizona 85012 Phone (602) 264-3803

WE BIND YOUR PERIODICALS

Preserve your reference journals as beautifully Bound Books. Choose from 30 different colors of durable Library Buckram or Imitation Leather.

$8.50 per volume, including name imprint

Inquire about quantity discounts.

Free local pick up and delivery on 10 volumes or more.

ROSWELL BOOKBINDING

2614 North 29th Avenue
PHOENIX, ARIZONA 85009
272-9338

ARIZONA MEDICINE

Address all correpondence to the
Journal Offices
810 W. Bethany Home Rd.,
Phoenix, Arizona 85013

Bruce E. Robinson
Business Manager

National Representative
John Murphy
State Medical Journal
Advertising Bureau, Inc.
711 South Boulevard
Oakpark, Illinois 60302

"The material in this journal is not copyrighted. We ask that anyone using material from it note the previous publication in ARIZONA MEDICINE."

CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

1. Manuscripts, including references or bibliography, should be typewritten, double-spaced, on one side of the paper only, and the original and a carbon enclosed.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

5. The Journal reserves the right to edit all material.

6. Reprints will be supplied to the author at printing cost.

Saffola® is higher in polyunsaturates than Fleischmann's, Imperial or Mazola.

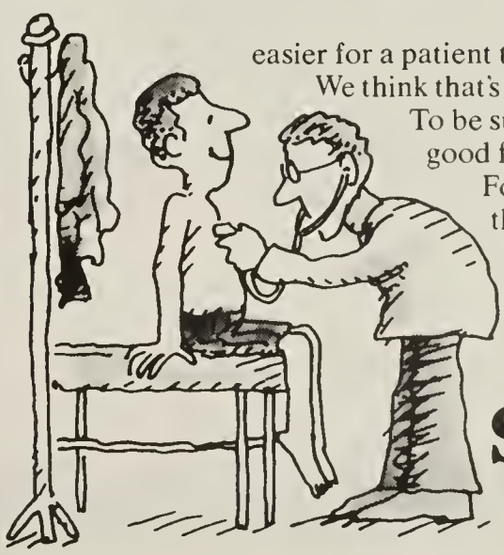


Shouldn't that difference make a difference in what you recommend?

Your patients on modified fat diets can't do better than Saffola. Of the leading margarines, Saffola is highest in polyunsaturates. And no other margarine is lower than Saffola in saturated fats. Because Saffola contains safflower oil—one of nature's most perfect foods. Safflower oil is higher in polyunsaturates than any vegetable oil, including corn oil.

But to your patients, Saffola's good taste is just as important as Saffola's nutrition. The flavor makes it easier for a patient to follow a low cholesterol diet.

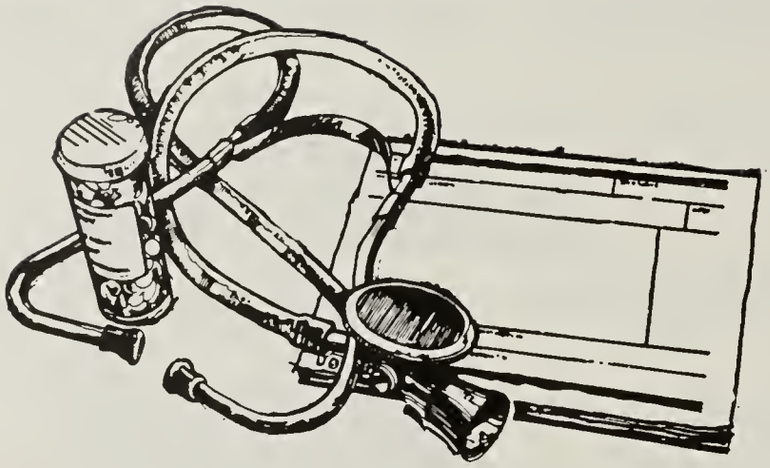
We think that's why Saffola is worth recommending. To be sure your patients are eating what's good for them, and enjoying it.



For comparative information about the nutritional benefits of Saffola, write Consumer Products Division, PVO International Inc., World Trade Center, San Francisco, 94111.

Saffola





PHYSICIAN . . . YOUR GENERAL PRACTICE COULDN'T BE MORE GENERAL . . . IN THE AIR FORCE.

Our doctors treat everything from neonatology to geriatrics, with modern facilities and a highly trained support staff. A medical career in the Air Force offers many other advantages. Reasonable hours with time to spend with your family. Outstanding Air Force Base facilities. Administrative support. Patient treatment without regard for ability to pay. And an excellent educational program is available if you wish to specialize.

For further information, call or write:

CAPT LARRY MARRS or M/SGT JACK McGIVNEY

2020 South Mill Ave., Suite 115 • Tempe, Arizona 85282

Phone: 261-4971

Come See Us In Booths

Numbers 3, 4 and 5

at the 85th ANNUAL MEETING
ARIZONA MEDICAL ASSOCIATION

Office Systems And Machines, Inc.

(SUCCESSOR TO REMINGTON RAND, PHOENIX)

1808 N. CENTRAL AVE.
Phoenix, Arizona 85004
(602) 258-6171 and 258-6747

We will be displaying:



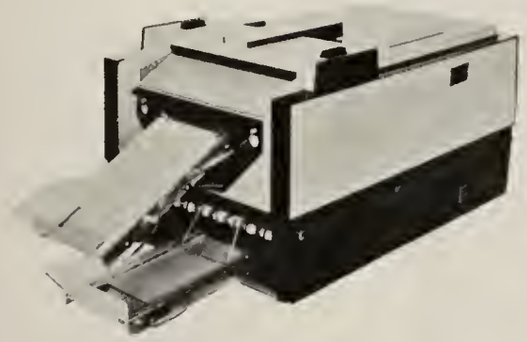
Insulated Files to protect your valuable records from fire.



Automated color coded filing systems of all types.



Microfilm Cameras and Readers



Copying Machines



New Remington single element (Ball) Typewriter



Electronic Printing Desk Calculators

After a busy day, be our Guest in our Hospitality Suite — 167 North Wing, Safari Hotel

THE PSYCHIATRIC INSTITUTE OF MEXICO CITY

In beautiful Lomas de Chapultapec



- ★ U.S. trained bilingual medical staff
- ★ High staff-to-patient ratio
- ★ Conforms to highest U.S. standards of mental health care
- ★ Restful, therapeutic surroundings
- ★ Modern, comfortable accommodations, including private bungalows

Treatment programs include:

Individual and Group Psychotherapy
Alcohol Detoxification and Rehabilitation
Psychological Testing
Individual Psychoanalysis

For information contact: Rod O'Connor, Administrator, Psychiatric Institute of Mexico City, Paseo de la Reforma 2600, Lomas de Chapultapec, Mexico 10, D.F. Affiliate of The Psychiatric Institutes of America.

CDL

CARDIOVASCULAR DIAGNOSTIC LABORATORIES, LTD.

ADULT AND PEDIATRIC OUTPATIENT CARDIOVASCULAR SCREENING PROFILE



Specialized History and Physical Examination
Chest and Abdominal X-rays
Blood and Urine Chemistries
Electrocardiogram
Vector Electrocardiogram
Stress (treadmill) Electrocardiogram
Cardiac and Peripheral Vascular Ultrasound

Complete Test Results to the Physician within 24 Hours.

Member of Maricopa Foundation

3800 NORTH CENTRAL AVENUE, SUITE 303

PHONE: (602) 264-3500

PreSun®

(5% PABA LOTION)

may help prevent harmful effects of the sun such as premature aging of skin and skin cancer.*

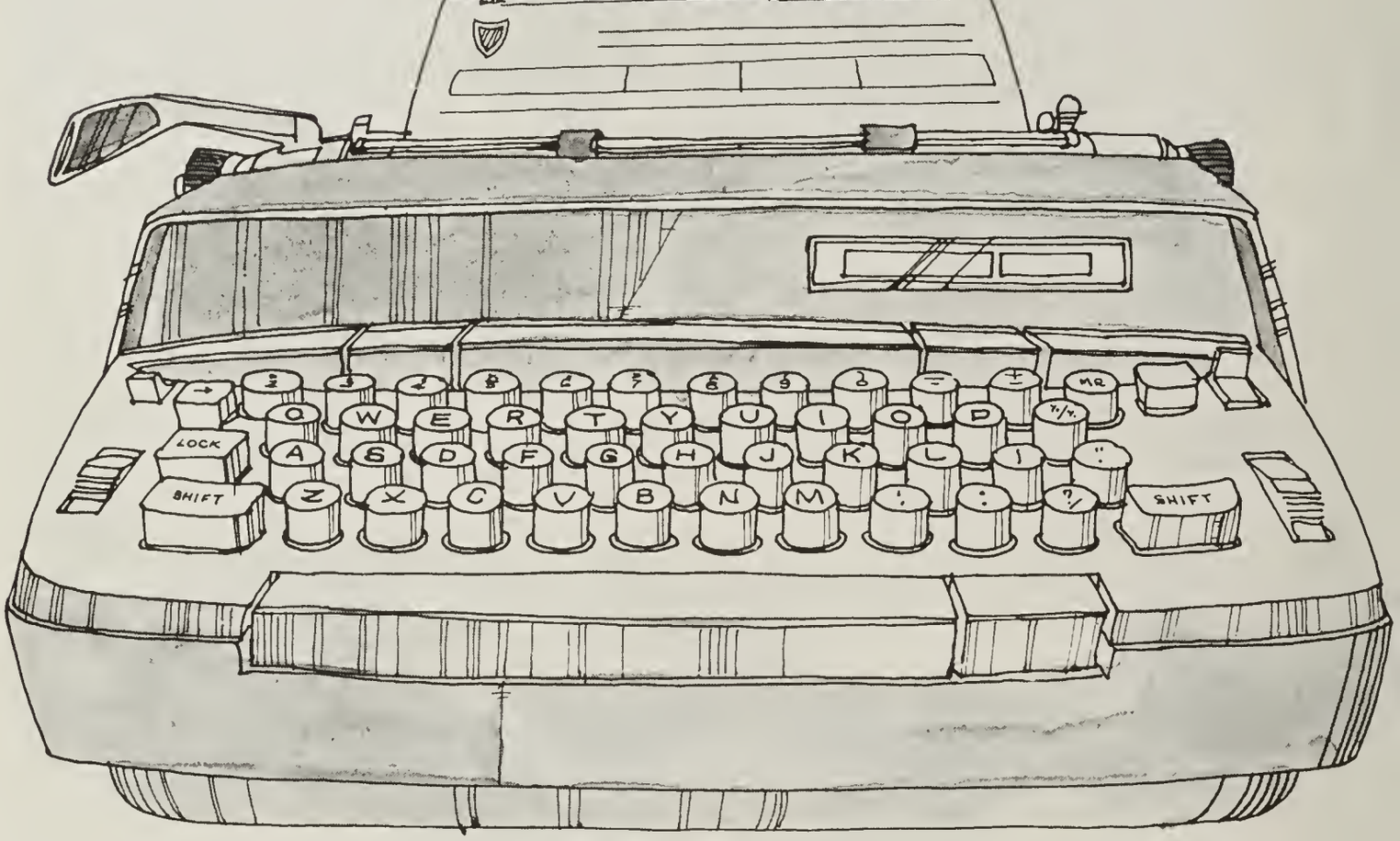


*Information on file at Westwood Pharmaceuticals Inc.

WESTWOOD
PHARMACEUTICALS INC.
Buffalo, New York 14213

©1974, W. P. Inc.

Now, filling out Blue Shield claims forms is easier.



Acting upon the recommendation of the AMA and ArMA, we have recently implemented a standardized claims form that can even be used by other insurance carriers. It should help make the job of claims paperwork easier for everyone involved. If you have any questions, phone your Blue Shield representative.

Blue Shield of Arizona

The Leader

Famous Fighters



NEOSPORIN® Ointment
(polymyxin B-bacitracin-neomycin)
is a famous fighter, too.

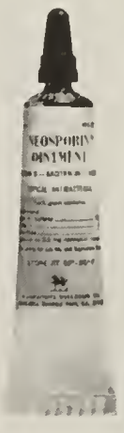
Provides overlapping, broad-spectrum antibacterial action to help combat infection caused by common susceptible pathogens (including staph and strep).

Each gram contains: Aerosporin® brand Polymyxin B Sulfate 5,000 units; zinc bacitracin 400 units; neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

INDICATIONS: Therapeutically (as an adjunct to systemic therapy when indicated) for topical infections, primary or secondary, due to susceptible organisms, as in: • infected burns, skin grafts, surgical incisions, otitis externa • primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection.

Prophylactically, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing. **CONTRAINDICATIONS:** Not for use in the eyes or external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of the components. **WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended. **PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs. **ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

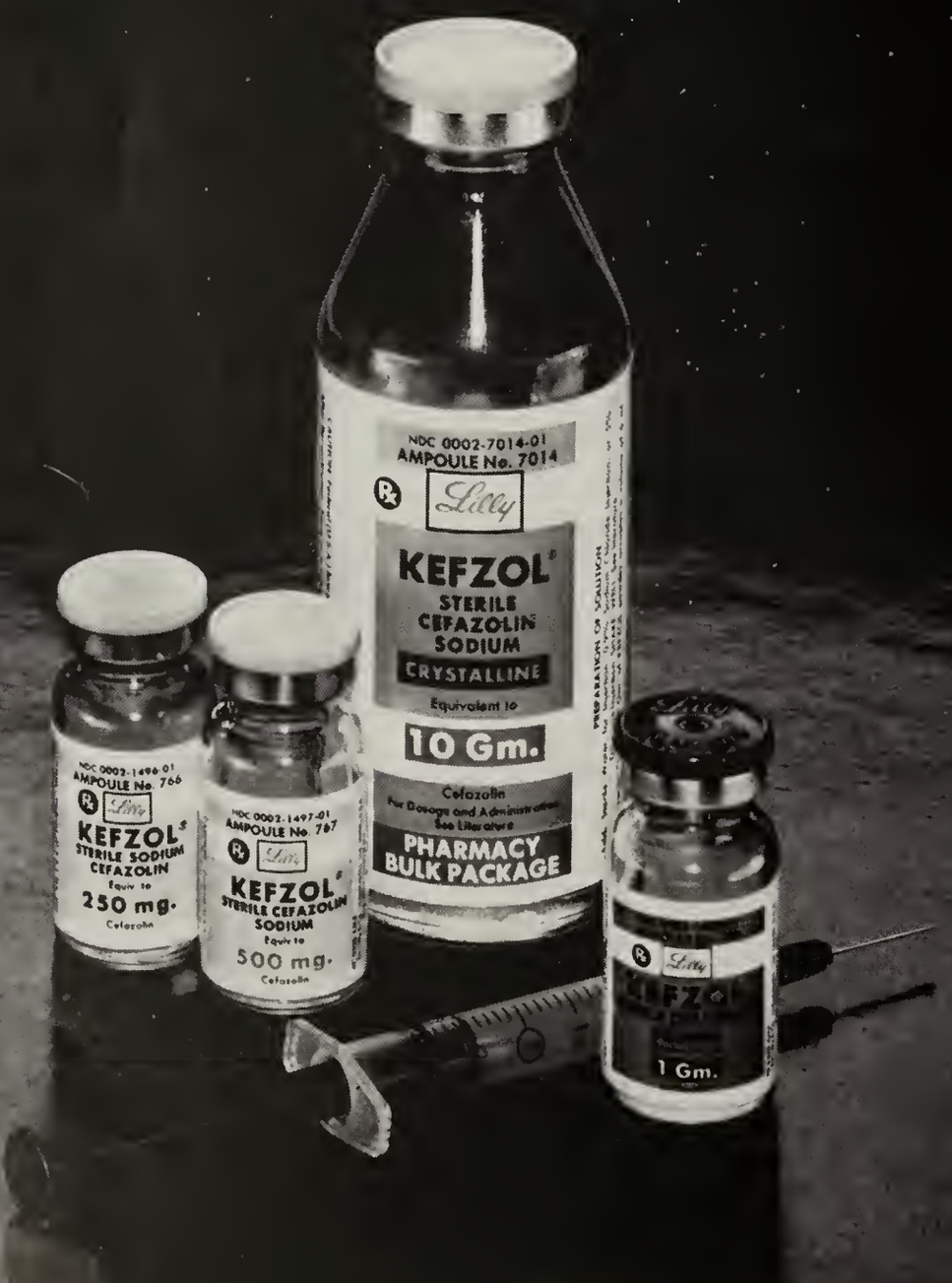


Wellcome

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Kefzol®
cefazolin sodium

Ampoules, equivalent to 250 mg., 500 mg., 1 Gm., and 10 Gm. of cefazolin



Lilly

Additional information available to the profession on request.

Eli Lilly and Company
Indianapolis, Indiana 46206

600062

Original Articles

COEXISTENT BRONCHOGENIC CARCINOMA AND PULMONARY COCCIDIOIDOMYCOSIS

JAYANTA K. CHOWDHURY, M.D., F.C.C.P.
JUDITH ANN PESTER, M.D.

INTRODUCTION

In the endemic area for coccidioidomycosis, bronchogenic carcinoma and pulmonary coccidioidomycosis, may coexist and present diagnostic and therapeutic dilemma. Two case reports are presented and literature is reviewed.

CASE 1

This 62-year-old Caucasian female had been a resident in the endemic area since 1945. She was admitted to the Phoenix Veterans Administration Hospital on May 28, 1974 with one month's history of hemoptysis. Chest radiograph showed a right parahilar mass with right upper lobe infiltrates (Fig. 1). These abnormalities were not present on her last chest radiograph taken on May 11, 1972. Smoking history consisted of one



Figure 1
(Case 1), Chest radiograph, May 31, 1974: Right parahilar mass and right upper lobe infiltrates.

From: Veterans Administration Hospital, 7th St. & Indian School Rd., Phoenix, 85012, (Reprint requests to Dr. Chowdhury)

Presented at the Arizona Regional Meeting of the American College of Physicians in Tucson, AZ, Oct. 31-Nov. 1, 1975.

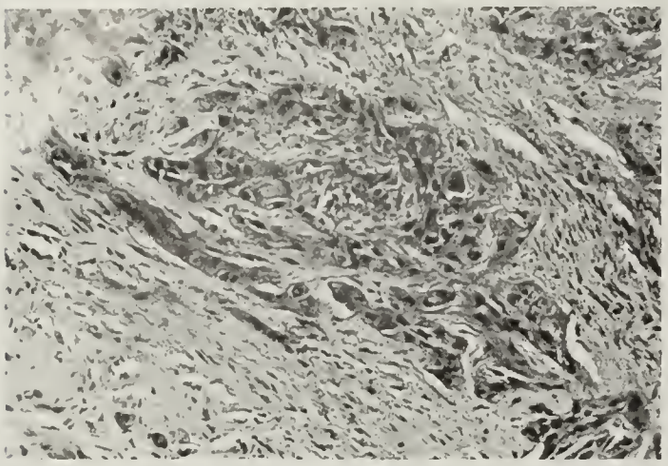


Figure 2

(Case 1): High power photomicrograph shows moderately well differentiated squamous cell bronchogenic carcinoma.

and a half packs of cigarettes a day for 40 years. Since 1954, the patient had noticed progressive shortness of breath and chronic sputum production. Pulmonary function studies in 1966 had shown a normal forced vital capacity (F.V.C.) and forced expiratory volume in one second (F.E.V. 1.0) was 55% of F.V.C. A fungating tumor of the right main bronchus, close to the carina was seen by bronchoscopy on June 4, 1974. Biopsy material showed this to be a squamous cell bronchogenic carcinoma (Fig. 2). Sputum culture from June 5, 1974 grew C. immitis. Skin test with Coccidioidin 1:100 was negative and precipitin and complement fixation tests for coccidioidal infection were also negative. Palliative radiation of 3,000 rads was given. Radiologic deterioration noted before radiation therapy (Fig. 3) continued during therapy and after. During November 1974, C. immitis was again cultured in sputum, but the patient had not experienced any progression of pulmonary symptoms and it was decided not to give Amphotericin B therapy. She was admitted to the hospital for the last time on December 16, 1974 terminally ill and on her request, only symptomatic treatment was given. She expired three days later. December 17, 1974 chest radio-



Figure 3

(Case 1), Chest radiograph, August 30, 1974: Pre-radiation chest film shows that radiologic deterioration has already occurred.

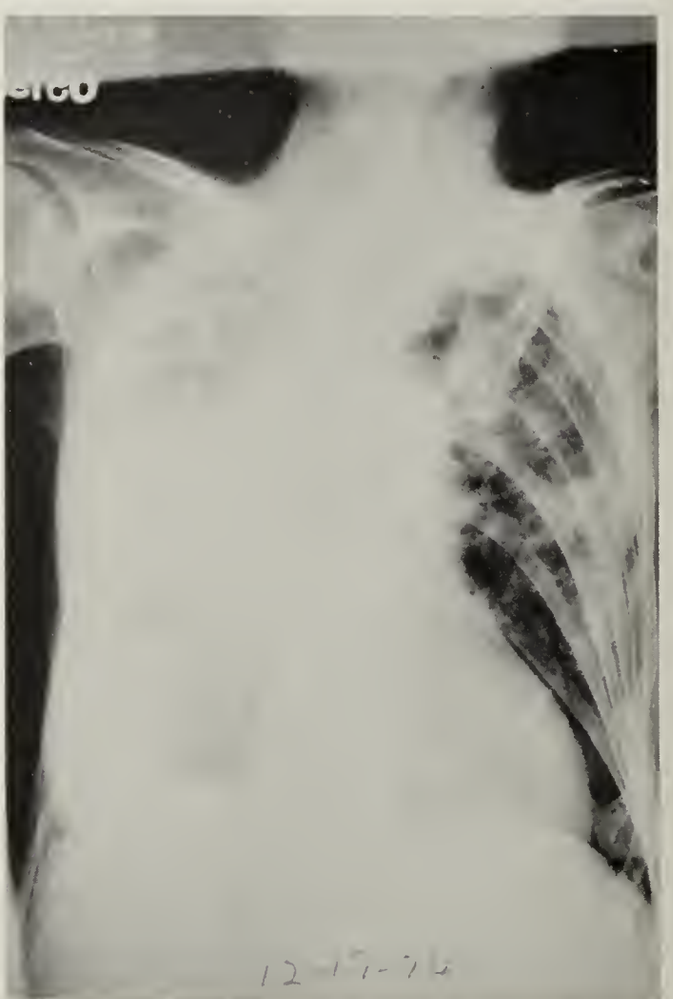


Figure 4

(Case 1), Chest radiograph, December 17, 1974: Extensive involvement of the entire right lung and most of the left lung as well are seen.

graph showed extensive infiltrates over the entire right lung with cavitation and infiltrates over most of the left lung as well (Fig. 4). Multiple cavitary lesions were present in both lungs at autopsy. Extensive caseating granulomas with spherules were also identified in both lungs. Gross examination failed to reveal the presence of carcinoma, but microscopic examination revealed the presence of invasive squamous carcinoma in the right main bronchus close to the carina.

CASE 2

This 68-year-old Caucasian male had been a resident in the endemic area since 1917. The patient smoked two packs of cigarettes a day for 30 years until 1969 when he stopped smoking because of arteriosclerosis obliterans in lower extremities. His chest radiograph on June 25, 1969 showed a right upper lobe nodule. Skin test was positive for Coccidioidin. Serial chest radiographs since showed the following:

1. September 16, 1971: Right upper lobe nodule was unchanged but another nodule was seen in right lower lobe.
2. October 3, 1972: No change was seen in either nodule.
3. April 19, 1973: Right upper lobe nodule was unchanged but right lower lobe nodule was larger (Fig. 5).



Figure 5

(Case 2), Chest radiograph, April 19, 1973: Coin lesion in right lower lobe was proven to be a bronchogenic carcinoma at thoractomy. The nodule in right upper lobe had remained unchanged since 1969.

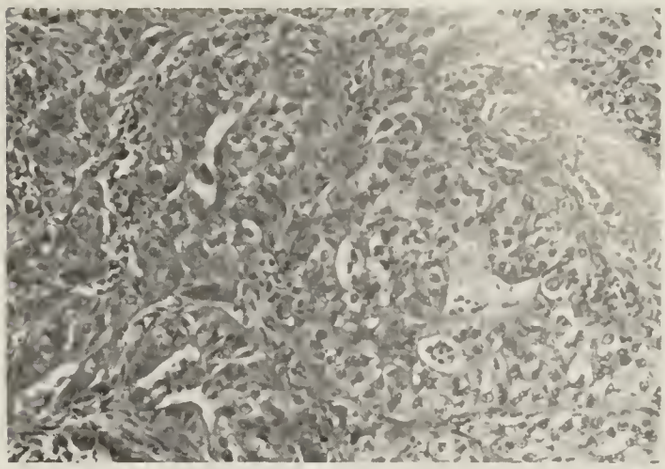


Figure 6

(Case 2): High power photomicrograph of right lower lobe coin lesion shows poorly differentiated adenocarcinoma.

On April 26, 1973, a 2 cm area of poorly differentiated adenocarcinoma (Fig. 6) was found in the right lower lobe during exploratory thoracotomy and right lower lobectomy was performed. Skin test with Coccidioidin 1:100 was positive with 27 mm induration at this time. Sputum cultures and precipitin and complement fixation tests for coccidioidal infection were negative. During the follow up period, radiological deterioration with cavitation in the right upper lobe nodule was seen on December 2, 1974 and March 10, 1975 (Fig. 7). Sputum cultures grew arthrospores of C. immitis on January 20,



Figure 7

(Case 2), Chest radiograph, March 10, 1975: Cavitation has now occurred in place of the right upper lobe nodule. Postoperative changes are present in the lower lung field on the right side.

1975 and March 12, 1975. Skin test with Coccidioidin 1:100 was negative in February 1975 with 0 mm induration. Serum was anticomplimentary for complement fixation titer but immunodiffusion complement fixation (I.D.C.F.) titer was positive in 1:2 dilution. During March 1975, pros and cons of Amphotericin B therapy were discussed with the patient. In the absence of pulmonary symptoms the patient was reluctant to accept it and no strong recommendation was made in favor of therapy. After an acute illness, the patient expired on June 16, 1975. At autopsy examination infarction of the entire right lung with thrombus in right pulmonary artery was found. The lung had macerated and examination for the presence of carcinoma and coccidioidomycosis was unsatisfactory. Metastatic carcinoma was found in the liver and in several ribs.

DISCUSSION

Solitary pulmonary nodule provides a frequent diagnostic dilemma in the endemic area for coccidioidomycosis. Cohen, Gale and Liston reported on 77 such cases from Arizona.[1] Of these, 50 cases were coccidioidomycosis and 20 cases bronchogenic carcinoma. Read reported from the same area on 200 solitary pulmonary nodules which were resected.[2] Sixty percent of them were coccidioidoma and 35% were malignant, mostly bronchogenic carcinoma. No data are available on the frequency with which bronchogenic carcinoma and pulmonary coccidioidomycosis may coexist. Case 1 in this paper presented as a case of bronchogenic carcinoma and because of positive sputum culture for C. immitis obtained routinely at the time of bronchoscopy, it was possible to make the diagnosis of coccidioidomycosis at this time. Skin test and serology were both negative. The patient suffered from chronic obstructive pulmonary disease and did not notice any change in symptoms until terminally. The question of Amphotericin B therapy was discussed, but because of lack of progression of symptoms it was not given. In retrospect, it should have perhaps been given on the basis of radiologic deterioration alone. However, it was not clear until she was terminally ill whether the radiologic deterioration represented progression of the carcinoma, post-radiation changes or deterioration from coccidioidomycosis. In a necropsy series of 142 cases of fatal coccidioidomycosis, Huntington and others reported on one case where lobectomy for squamous carcinoma of the lung was performed.[3] New shadows were naturally assumed to represent recurrent malignancy. "It was embarrassing to find that the massive pulmonary lesion present at autopsy was not malignant, but coccidioidal." In Case 2, the right upper lobe nodule can be regarded as coccidioidal. The patient had a positive skin test and the nodule remained unchanged for several years until cavitation took place and sputum culture grew C. immitis. The lower lobe nodule was regarded as coccidioidal also until 19 months later when because of regular follow up with chest radiograph increase in size of this nodule was appreciated and adenocarcinoma was diagnosed by thoracotomy. Serology test was unhelpful and confusing. Cheu described a 57-year-old male with two pulmonary nodules.[4] The nodule in the right lung was removed to rule out the possibility of malignant tumor and this turned out to be coccidioidal. Three months later the nodule in the left lung had increased in size. Bronchogenic carcinoma in the left lung was diagnosed after thoractomy. Salkin reported seven cases of coexistent bronchogenic carcinoma and pulmonary coccidioidomycosis.[5] Diagnosis of both conditions was suspected in only one case and in the rest, the diagnosis was made either from the resected lung specimens or at autopsy. In several patients, skin test and serology were negative.

CONCLUSION

In the endemic area for coccidioidomycosis, the possibility of coexistence of bronchogenic carcinoma and pulmonary coccidioidomycosis should be borne in mind. Diagnostic confusion may arise especially as skin test and serology may be negative in the presence of progressive coccidioidomycosis. Pulmonary nodules need careful follow up.

REFERENCES

1. Cohen, S.L.; Gale, A.M.; and Liston, H.E.: Report of a pilot study on non-calcified discrete pulmonary coin lesions in a coccidioidomycosis endemic area. Ariz. Med. 29:40, 1972.
2. Read, C.T.: Coin lesion, pulmonary: in the southwest (solitary pulmonary nodules). Ariz. Med. 29:775, 1972.
3. Huntington Jr., R.W.; Waldman, W.J.; Sargent, J.A.; O'Connel, H.; Wybel, R.; Croll, D.: Pathological and clinical observations on 142 cases of fatal coccidioidomycosis with necropsy. Proceedings of second coccidioidmycosis symposium, Phoenix, Arizona, 1965. Ed. by Ajello, L. The University of Arizona Press.
4. Cheu, S.H.: Coexistent bronchogenic carcinoma and coccidioidoma: A diagnostic dilemma. Progress report of the Veterans Administration—Armed Forces Coccidioidomycosis Study Group. August 1970.
5. Salkin, D.: Coccy and carcinoma of the lung. Progress report of the Veterans Administration—Armed Forces Coccidioidomycosis Study Group. August 1970.

INSULINOMAS: NEW AIDS IN DIAGNOSIS

MARSHALL B. BLOCK, M.D.
LAURANCE B. NILSEN, M.D.
WILLIAM F. STEWART, M.D.

ABSTRACT

The ability to monitor additional Beta cell products from the islets of Langerhans has greatly enhanced our ability to establish whether autonomously secreting B-cell tumors are present. Utilizing measurements of C-peptide and proinsulin in two illustrative patients these newer aides in diagnosing insulinomas are presented.

INTRODUCTION

The discovery of proinsulin the single chain precursor of insulin, has greatly enhanced our understanding of insulin biosynthesis.[1]Clinically, this information has been utilized to permit additional products of beta cell secretion to be monitored in the peripheral circulation of man. These compounds include proinsulin itself, various proinsulin-like compounds and C-peptide. The last of those mentioned connects (thus "C") the two chains of insulin in the proinsulin molecule.

Our current understanding of insulin biosynthesis suggests that within the nucleus of the beta cell, within the islets of Langerhans, DNA coded for the proinsulin amino acid structure gives rise to messenger RNA which enters the cytoasm and together with the soluble RNA helps assemble the primary amino acid structure for the proinsulin molecule on the rough endoplasmic reticulum. From the rough endoplasmic reticulum, proinsulin's primary amino acid structure enters the Golgi apparatus which ultimately forms the secretory granules in which the conversion of proinsulin to insulin and the connecting peptide takes place. This process is under the control of one or more enzymes. As in all biological systems, conversion is never complete and some intact and partially converted proinsulin is secreted as the granules fuse with the basement membrane of the beta cell through a process called emiocytosis. Thus insulin and C-peptide are secreted in equimolar amounts from the beta cell in addition to intact and partially converted proinsulin compounds.[2] The diagnostic potential of measuring C-peptide and proinsulin-like compounds in the peripheral circulation of patients with insulinomas has recently appeared and this paper will illustrate these advances in two representative patients suspected of having fasting hypoglycemia which we have studied this past year.[3,4]

From: Endocrinology Associates, P.A., 3411 N. 5th Ave., Phoenix, 85013. (Reprint requests to Dr. Block).

Presented at the Arizona Regional Meeting of the American College of Physicians in Tucson, AZ, Oct. 31-Nov. 1, 1975.

CASE REPORTS

Patient No. 1: S. L. was a 21-year-old woman who was referred for an evaluation of early morning anxiety episodes. These episodes were characterized by internal "nervousness" associated with sweating and marked irritability. On occasion the patient noted that her pillowcase was moist on arising. She, however, denied feeling hungry and did not keep food at the bedside. On occasion these symptoms were alleviated by the ingestion of food. However, this was not the rule. She, in addition, had episodes later in the day, usually by 11:00 A.M. and at 4:00 P.M. of similar symptoms which again were questionably relieved by food intake. She otherwise had been healthy and had no significant past medical history. Her family history was negative for a familial endocrinopathy. Social history revealed that the patient worked as a secretary and was taking no medications. On physical examination the patient was normal. Routine screening laboratory studies did not reveal any abnormalities. Thyroid function studies were normal as were basal and diurnal plasma cortisol determinations. A Cortrosyn stimulation study was likewise normal. A lateral skull x-ray revealed no significant abnormalities. The patient was admitted to a local hospital and underwent as an initial screening study a 72 hour fast. A fasting serum specimen for proinsulin was obtained and she underwent an insulin infusion study.

Patient No. 2: K. K. was a 51-year-old man who had a four to five month history of episodic dizziness with questionable amnesia episodes which occurred only in the afternoon. In particular, the patient had one episode where he lost consciousness while driving his car approxi-

mately 4:00 or 5:00 P.M. in the afternoon. He spontaneously awoke after that episode but did not have any memory of it. There was no significant past history of central nervous system disorders but he did have a history of nephrolithiasis but had been asymptomatic for the last five years. His family history was negative for any endocrinopathies and on physical examination the patient appeared healthy. Initial routine screening laboratory studies were normal. Thyroid function studies, basal and diurnal plasma cortisol determinations, and skull x-rays were unremarkable. An electroencephalogram and brain scan likewise were normal. The patient was admitted to a local hospital and underwent a 72 hour fast. He subsequently had a fasting proinsulin determination and underwent an insulin infusion study. He in addition had a glucagon stimulation test.

RESULTS

Figure 1 demonstrates the results of the prolonged fast performed in patient S. L. Her blood sugar level dropped to below 40 mg.% approximately 18 hours into the fast but spontaneously rose to almost 50 mg.% by 24 hours. She subsequently again had a decline in her plasma sugar level to below 40 mg.% but again was able to spontaneously return the level to above 50 mg.%. Throughout the fast and at the points of lowest blood sugar her serum insulin level was appropriately suppressed. Figure 2 demonstrates the percent proinsulin in her fasting sera. As can be seen, Patient S. L. had 15% of her fasting insulin immunoreactivity composed of proinsulin. This was within normal limits. During an insulin infusion study as shown in Figure 3, her basal C-peptide levels were 1.8 ng./ml. and they declined to less than 0.5 ng./ml. 60 minutes after insulin was started.

Figure 4 shows K. K.'s 72 hour fast results. As can be seen, the patient's serum glucose declined to less than 50 mg.% within 18 hours of starting the study. It remained below this level and slowly declined to 30 mg./100 ml. by 38 hours when the fast was terminated. At that time the patient was complaining of central nervous system dysfunction, especially disorientation and dysphagia. Serum insulin determinations performed during this fast revealed basal levels which were elevated in the 20 to 25 uU./ml. range. Figure 2 shows the percentage proinsulin in his fasting sera. 43% was found compared to a normal maximum of 22%. As shown in Figure 5, during an insulin infusion study his basal C-peptide levels were markedly elevated (6 ng./ml.) and remained in this range throughout the insulin infusion. A glucagon stimulation study demonstrated a peak plasma immunoreactive insulin level of over 200 uU./ml. within 15 minutes of 1.0 mg. intravenous bolus of glucagon.

DISCUSSION

As a general rule, endocrinology suppression studies are utilized to assess whether a gland is functioning autonomously. For instance, in order to assess whether adrenal gland activity is

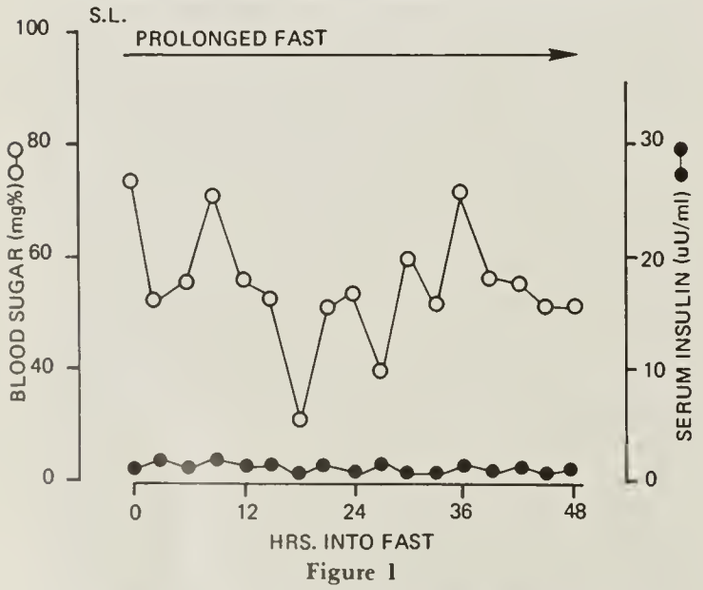


Figure 1

The results of a prolonged fast in patient S. L. are depicted. Serum insulin values were appropriately suppressed throughout the fast.

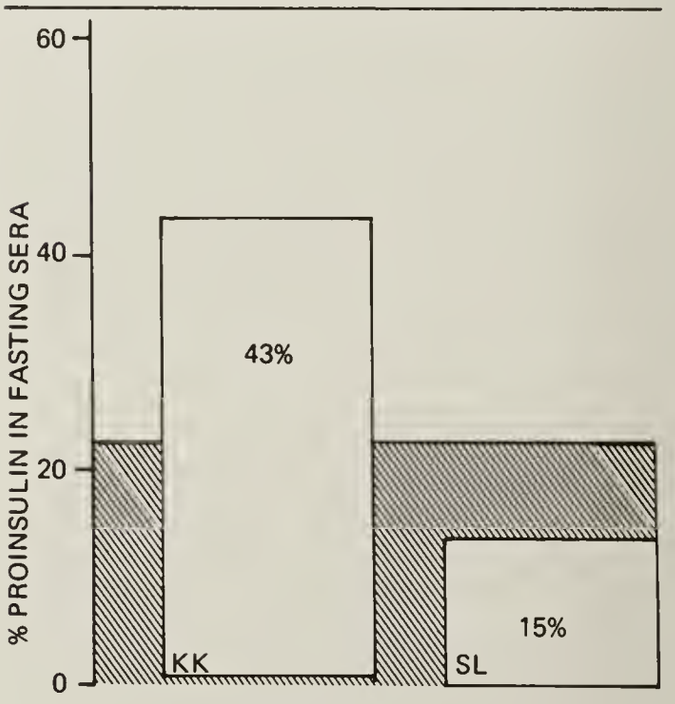


Figure 2

The percentage of proinsulin in fasting sera from patients K. K. and S. L. are shown. Normal limits are shown by hatched area. K. K. had elevated values in contrast to S. L.

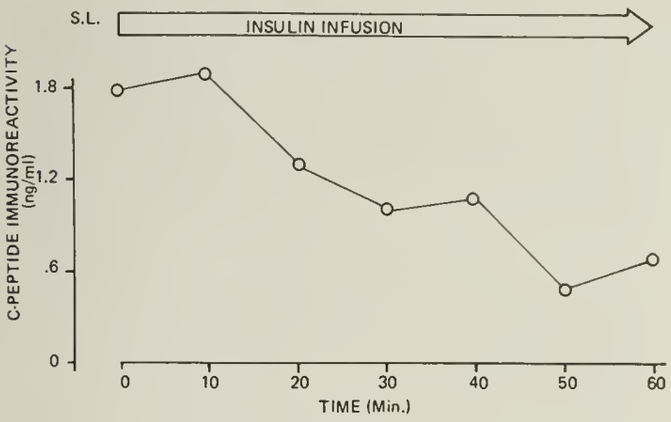


Figure 3

During an insulin infusion (.10/kg./hr.) serum C-peptide immunoreactivity levels are plotted for patient S. L. C-peptide levels declined as the blood sugar was reduced.

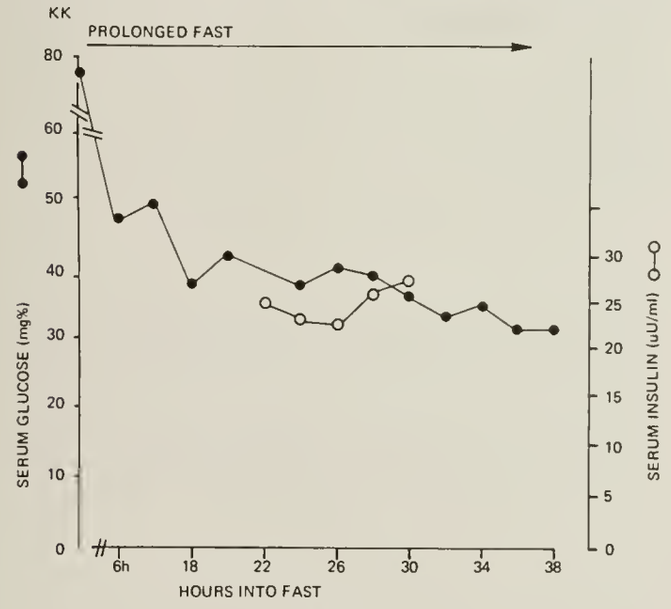


Figure 4

The results of a prolonged fast in patient K. K. are depcited. Serum insulin values were inappropriately elevated for the level of serum glucose.

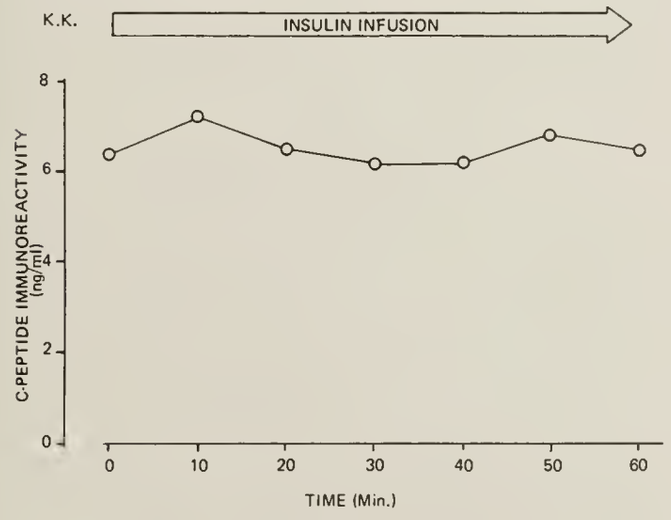


Figure 5

During an insulin infusion (.10/kg./hr.) in K. K., serum C-peptide levels are plotted. Elevated basal levels failed to decline as hypoglycemia was produced.

excessive, dexamethasone suppression is utilized. Likewise, when an autonomously functioning thyroid nodule is suspected, triiodothyronine (Cytomel) suppression is utilized. However, it has been difficult to utilize similar principles when considering whether an insulinoma is present. Since hypoglycemia is the most potent suppressor of insulin secretion, it is necessary to produce the decline in blood sugar by the administration of either exogenous insulin or other drugs such as tolbutamide. Exogenous bovine or procine insulin will cross-react in the insulin radioimmunoassay, hindering the measurement of endogenous insulin while agents like, tolbutamide, stimulate insulin secretion and interfere with the normal secretory mechanisims which one is attempting to study. It therefore is difficult to perform such studies. Recently the availability of fish insulin which has a different immunological configuration and thus can be measured independently of human insulin has been utilized in such a fashion. However, the clinical availability of fish insulin is limited. With the discovery of proinsulin and its conversion to insulin and C-peptide and the development of a C-peptide immunoassay, it has now become possible to measure additional beta cell products which are secreted in patients who have insulinomas. We can now induce hypoglycemia by giving exogenous insulin and measure C-peptide. This circumvents the problem mentioned above concerning the cross-reaction between bovine and procine insulin and human insulin.

In addition, endocrine glands which are actively synthesizing and secreting their hormonal products tend to secrete not only the active principal, but on occasion more than normal quantities of various fragments and/or precursors. Historically this is how proinsulin itself was first detected in man. A patient with an insulinoma was found to have a larger than normal polypeptide circulating in his system which had immunological similarities with the insulin molecule.[1] Thus measurements of proinsulin, which are now also available, can help in differentiating a patient having an insulinoma.

Utilization of these measurements in the two patients presented helped us to differentiate the patient with an autonomously secreting insulinoma. As can be seen in Figures 3 and 5, during insulin-induced hypoglycemia only Patient S. L. was able to suppress her endogenous secretion of C-peptide. Patient K. K. was not able to do this.

Likewise measurements of proinsulin in both of these patients, as shown in Figure 2, demonstrates that levels were markedly elevated in Patient K. K. while they were within the normal range in Patient S. L. Subsequently Patient K. K. underwent several diagnostic angiographic procedures which demonstrated a tumor blush in the tail of his pancreas at the hilum of the spleen. Exploratory surgery was performed and a discrete insulinoma was found in this location and resected successfully. The patient subsequently has had no recurrent symptoms.

In summary then, there are now additional studies which can be performed in patients suspected of having fasting hypoglycemia which can help in diagnosing autonomously secreting insulinomas. These should be utilized when a high degree of suspicion is present that a patient has an insulinoma.

REFERENCES

1. Steiner, D. F. and Dyer, P. E., Proc. Natl. Acad. Sci. U.S., 57:473-480, 1967.
2. Rubenstein, A. H., et al, Nature, 224:697-699, 1969.
3. Couropmitree, C., et al, Ann. Int. Med., 82:102-204, 1975.
4. Alsever, R. N., et al, Ann. Int. Med., 82:347-350, 1975.

Brief Review:
Block, M.D. and Hofeldt, F.D., Ariz. Med., 32:22-25, 1975.

ADRIAMYCIN HEART DISEASE

GORDON A EWY, M.D.
STEPHEN JONES, M.D.
BERTRON M. GROVES, M.D.

INTRODUCTION

Adriamycin, or doxorubicin, is a new anticancer drug which is highly effective when employed singly or in combination with other agents in the treatment of a wide variety of human neoplasms (Table I).[1,2] It is closely related to daunomycin, or daunorubicin, which has been used primarily to treat leukemia. Both drugs belong to the class of anthracycline antibiotics and have potential cardiotoxic effects. Adriamycin has a much broader spectrum of anti-tumor activity than daunomycin and possibly less cardiotoxic effects. It has gained recent FDA approval for clinical usage and is currently one of the most commonly employed anti-tumor agents in the world.[3] Due to this widespread usage, the snydrome of "Adriamycin heart disease" is increasingly being encountered by physicians. This review briefly describes what is known about this entity.

The most frequent side effects of adriamycin are alopecia, stomatitis, leukopenia, nausea and vomiting. Although these toxic effects are important in defining the schedule and dose of adriamycin, the major limitation to the total dose that can be clincally tolerated is the development of adriamycin cardiotoxicity, a condition manifest primarily by congestive heart failure. The initial and subsequent reports from Lafrak and associates demonstrated that adriamycin cardiotoxicity is not an allergic, hyper-

From: the Department of Internal Medicine, University of Arizona College of Medicine, Tucson, Arizona.

Supported in part by a grant from Adria Laboratories, and in part by Public Health Service Grant, CA-17094.

Reprint requests should be addressed to Gordon A. Ewy, M.D., Professor of Internal Medicine, Arizona Medical Center, Tucson, Arizona 85724.

Presented at the Arizona Regional Meeting of the American College of Physicians in Tucson, Az, Oct. 31-Nov. 1, 1975.

Table I

Cancers in which Adriamycin (alone or in combination) has definite clinical value

HIGHLY EFFECTIVE	MODERATELY EFFECTIVE
lymphomas	lung
breast	prostate
sarcomas	genitourinary
leukemia	thyroid
ovarian	childhood cancers
endometrial	myeloma

Table II

Pathological Effects of Radiation and Adriamycin (Rabbits)

Adriamycin	
High Dose	Myocyte Damage
Low Dose	Minimal Changes
Radiation	
High Dose	Capillary Damage, Pericarditis
Low Dose	Minimal Changes
Adriamycin and Radiation	
Low Dose of Both	Myocyte Damage Capillary Damage Pericarditis

After Eltringhaus and Fajardo, References 16.

sensitivity, or idiosyncratic reaction but is clearly related to the total dose of the drug given.[3,4] Twelve of 758 patients who received adriamycin experienced the sudden onset of severe congestive heart failure. None had a previous history of heart disease. Eleven of the twelve received more than 550 mg/m^2 of adriamycin.[3,4] Nine of these twelve patients died from congestive heart failure within three weeks from the time that symptoms of failure were first noted.[3,4]

CLINICAL FEATURES

Adriamycin cardiomyopathy shares the features of other congestive cardiomyopathies with the clinical findings of resting tachycardia, narrow pulse pressure, and gallop rhythm. Central and peripheral congestion leads to symptoms of dyspnea, orthopnea and nocturia and the elevation of venous pressure produces rales and peripeheral edema. Reduction of cardiac output results in fatigue. Often the signs and symptoms can be improved by standard modes of therapy, i.e. restricted activity, decreased sodium intake, digitalis and diuretic therapy.

Deteriorating cardiac function in patients with adriamycin cardiomyopathy has been documented by several non-invasive methods. By *chest roentgenography* the cardiac silhouette is enlarged and pulmonary veins are congested. The decreased rate of left ventricular pressure generation can be demonstrated *phonocardiographically* by measurement of systolic time intervals.[5,6,7] The *echocardiogram* reveals a left ventricular chamber that is dilated in both systole and diastole. Poor contractility is reflected by a decrease in the amount of systolic narrowing of the left ventricular chamber.[8]

Electrocardiographic changes have been reported in 25% of patients receiving adriamycin. Most of these changes are non-specific ST or T wave changes and are transient. If the electrocardiogram is abnormal prior to therapy, additional abnormalities are more likely with treatment. The electrocardiographic changes are not necessarily predictive of the development of congestive heart failure. One change of particular interest is a drecrease in total QRS voltage. This is another finding that suggests a diffuse myocardial toxic process.[9,10] Unfortunately, it is not specific because of the occurance of pericardial effusion in patients with cancer. Atrial and ventricular arrhythmias occur but their exact frequency and clinical importance is yet to be defined.[9,10]

PHARMACOKINETICS AND PATHOLOGY

Following its intravenous administration, adriamycin is rapidly cleared from the circulation. The drug appears to be a "DNA-binder" and acts primarily by intercalating into the double-stranded DNA molecule. It may also inhibit DNA dependent RNA synthesis and at the mitochondrial level inhibits electron oxygen transport.[11] As with most anticancer drugs, adriamycin effects both normal and neoplastic cells. Unfortunately, cardiac muscle cells cannot regenerate as do the cells of the gastrointestinal tract and hemopoietic system.

Microscopical examination of the heart of patients who die with adriamycin heart disease reveal degenerating muscle fibers that disrupt the normal syncytial pattern of myocardial cells. Electron microscopy reveals degenerating muscle fibers with mitochondria which are vacuolated, disorganized and contain electron dense bodies.[9]

It is speculated that there may be some permanent, subclinical myocardial muscle damage with each dose of adriamycin. The cumulative effect of multiple doses may produce the microscopic findings listed above which account for the clinical and pathologic picture of a grossly dilated, flabby, and poorly contracting heart (adriamycin heart disease).

RISK FACTORS FOR ADRIAMYCIN HEART DISEASE

It is clear that the most important risk factor for the development of adriamycin cardiotoxicity is the total dose of adriamycin given. In Lefrak's series, congestive heart failure occurred in only one of 717 patients who received less than 550 mg/m^2 of adriamycin but congestive heart failure occurred in 11 of 41 patients (28%) who received more that 550 mg/m^2.[3] Similar findings were reported by Cortez and his associates.[10] Congestive heart failure occurred in none of the 70 patients who received less than 400 mg/m^2, in 2 of 90 patients who received less than 600 mg/m^2and in 7 of 10 patients who received more than 600 mg/m^2. This data emphasizes the dose relationship between *total dose of adriamycin* received and adriamycin heart disease.

There is evidence that a second factor contributing to the development of adriamycin cardiotoxicity is thoracic radiation. Gilladoga and associates reported 50 children who received between 495 and 1,695 mg/m^2 cumulative dose of adriamycin. Eight of these children had severe cardiomyopathy with congestive heart failure. They noted that the incidence was higher in children who had also received cardiac radiation. None of the 68 children who received between 200 and 495 mg/m^2 of adriamycin developed cardiomyopathy whether or not they had received irradiation also.[12] The National Cancer Institute reported two children who had received between 400 and 470 mg/m^2 of adriamycin along with thoracic radiation who developed severe congestive heart failure.[13] M.D. Anderson Hospital has reported seventeen patients who developed adriamycin cardiotoxicity; two of the three patients who developed adriamycin cardiomyopathy after receiving less than 500 mg/m^2 received previous thoracic radiation.[14] The above reports represent a small number of patients and are by no means conclusive, however, our own preliminary clinical data[8] and recent experimental evidence supports the view that previous thoracic radiation may be another risk factor for the development of adriamycin cardiotoxicity.

Eighty percent of rabbits given 2,000 rads to the thorax without adriamycin developed pathogenic changes within 100 days. Microscopically there was damage to the endothelial cells of the myocardial capillaries, with resultant rupture and/or thrombosis which produced ischemic injury and fibrosis. Pericardial effusions were common.[15,16] Dr. Jaenke reported that when rabbits were given adriamycin at 250 mg/m^2 without radiation over a 70 day period, 75% developed a cardiomyopathy. Microscopically there were very few inflammatory cells, but frequent loss of the myocardial muscle cells. A combined study by Eltringham and Fajardo showed that the combination of adriamycin and radiation have additive cardiotoxicity (Table II).[15,16] Our preliminary data reveals that four of eleven patients who have received more than 425 mg/m^2 of adriamycin also received previous thoracic radiation. Ventricular function, reflected by echocardiographic measurements, was significantly decreased in the patient who had previous thoracic radiation.[8]

Finally the group at M.D. Anderson Hospital has suggested that concurrent therapy with cyclophosphamide may be another risk factor.[14] Of 13 patients who developed adriamycin cardiomyopathy at a total dose below 555 mg/m^2, five had received concurrent cyclophosphamide, two had received prior radiotherapy alone, two had received both prior radiotherapy and cyclophosphamide therapy and four had received adriamycin alone. Although we have a large experience with the use of adriamycin and cyclophosphamide in combination,[17,18] we have not yet been able to confirm that the combined use of these two agents is any more likely to result in the development of cardiac toxicity than the use of adriamycin alone.

It appears logical that patients with known cardiovascular disease and cancer represent poor candidates for adriamycin therapy. This hypothesis has not as yet been proven. Patients with acute myocardial infarction who have a total loss of more than 40% of the left ventricular mass, die of cardiogenic shock.[19] This is true not only if the acute infarct damages more than 40% and damage from the acute infarction raises the total loss of left ventricular muscle mass to more than 40%. Since adriamycin causes a diffuse loss of muscle fibers, it is reasonable to assume that the 40% destruction would be produced sooner if the patients start with some loss of muscle from preexisting heart disease.

At this time, the "safest" way to avoid adriamycin heart disease is to limit the total dose of adriamycin to 550 mg/m^2. If patients have had prior thoracic radiation (or possibly therapy with cyclophosphamide), it is now being recommended that a total dosage of adriamycin of 450 mg/m^2 not be exceeded. Caution is also urged in administering this drug to patients with known severe underlying heart disease although at times the need to use adriamycin as an anti-cancer agent may outweigh the potential risk of damage to the heart.

PREDICTING ADRIAMYCIN CARDIOTOXICITY

Based on current clinical information, there is no test that will allow one to safely exceed the 550 mg/m^2 dose limit. As noted above, some patients developed adriamycin cardiomyopathy at lower dose levels. Therefore, it is probably important to follow patients receiving adriamycin with serial electrocardiograms and baseline and periodic evaluations of ventricular function by some non-invasive technique.

Minow and associates have attempted to quantitate the decreased voltage that is frequent-

ly observed in patients with adriamycin cardiomyopathy. They measured the absolute deflection of the QRS complex (measured in millimeters from the point of the lowest negative deflection to the highest positive deflection) in the six limb leads (I, II, III, aVR, aVL and aVF). The total or sum of the limb lead voltage was obtained. They felt that a decrease of 40% or greater in the total limb lead QRS voltage associated with any other cardiac abnormality, was an indication to discontinue adriamycin therapy.[14] One problem with this method is the decreased electrocardiographic QRS voltage that can occur with pericardial effusions. The usefulness of this approach needs confirmation by other workers.

Another non-invasive method of evaluating ventricular function is by measurement of the systolic time intervals (Figure 1). This method has been used extensively at some institutions[7] while others have claimed that it was too sensitive.[14] Nonetheless, it is our impression that an increase in the PEP/LVET ratio above 0.60 is an indication to stop adriamycin therapy and that patients with values near this range prior to therapy should not be treated with adriamycin.

Another non-invasive method of evaluating ventricular function in patients receiving adriamycin is by echocardiography.[8] We are currently studying a large number of cancer patients who are receiving adriamycin by employing all of the non-invasive techniques (electrocardiograms, phonocardiograms with measurement of systolic time intervals, and echocardiography). Patients are evaluated before their first dose of adriamycin and serially during their therapy. In this way, we hope to determine which of the non-invasive techniques provide the most reliable means of predicting early adriamycin cardiotoxicity. Although we have not as yet obtained enough serial data to draw conclusions, it is clear that abnormal ventricular function can be detected by measurements derived from echocardiography[8] as well as from recording of systolic time intervals. Many patients have received more than 550 mg/m^2 of adriamycin without developing adriamycin cardiomyopathy. It would appear important to identify this group of patients.

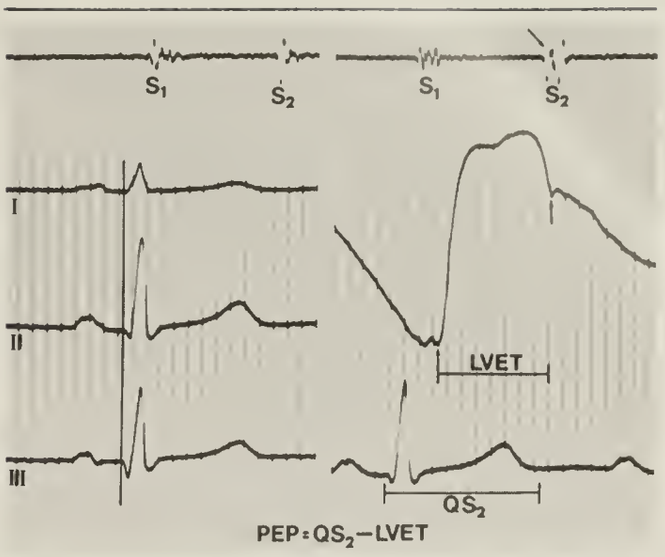


Figure 1

Measurement of systolic time intervals are obtained from simultaneous high speed (minimum of 100 mm per second) recordings of the phonocardiogram from the second left intercostal space, the indirect carotid pulsation, and a reference electrocardiogram.[5] The left ventricular ejection time (LVET) is the time from the onset of the carotid pulse to the dicrotic notch. The pre-ejection period (PEP) is the time from the onset of electrical depolarization to the onset of left ventricular ejection. Since there is time delay in the transmission of the systolic impulse to the carotids, the PEP cannot be measured directly but has to be obtained by subtracting the LVET from the total electrical mechanical systole (QS2). There is no significant delay in the transmission of the sound or electrical deflections. To be sure that the reference electrocardiographic lead that you are using represents the true onset of electrical depolarization, high speed recording of simultaneous lead I, II, and III should first be recorded. The earliest onset of the QRS complex to the peak of the R wave is measured. This interval is added to the time interval between the peak of the R wave to the first high frequency component of the second heart sound to obtain the true QS2 interval. At least ten complexes must be measured and the results averaged. Each interval has to be corrected for heart rate except for the ratio of PEP/LVET. This ratio correlates with more sophisticated means of measuring ventricular function.

CONCLUSIONS

Adriamycin cardiotoxicity is a serious complication of therapy with this useful antineoplastic drug that can probably be prevented by limiting the total dose of adriamycin to less than 550 mg/m^2 in low risk patients or to less than 450 mg/m^2 in patients with risk factors of prior thoracic radiation and/or concurrent cyclophosphamide therapy. Patients should be evaluated with electrocardiograms with calculation of total limb lead QRS voltage, and with systolic time intervals prior to therapy, and prior to each dose after a total of 300 mg/m^2 has been exceeded. A decrease in QRS voltage of more than 40% or an increase in the PEP/LVET ratio to more than 0.60 are indications to discontinue therapy until consultation is obtained from a cardiologist experienced in diagnosing patients with adriamycin heart disease. Echocardiography is useful in detecting pericardial effusions and altered left ventricular contractility. Patients with previous history of heart disease should be fully evaluated prior to the decision to begin adriamycin therapy.

Research in this area is ongoing. As more information becomes available, one would anticipate a revision in these recommendations.

ACKNOWLEDGEMENTS

The authors greatfully acknowledge the secretarial assistance of Ann Vallefuoco and Judy Hurley, and the research assistance of Helen Yauger and Ellen Chase. The services of the audiovisual Department of the Arizona Medical Center is appreciated.

REFERENCES

1. Blum, R.H. and Carter, S.K.: Adriamycin: A New Anticancer Drug With Significant Clinical Activity. Ann. Intern. Med. 80:249, 1974.
2. O'Bryan, R.M., Luce, J.K., Talley, R.W. et al.: Phase II Evaluation of Adriamycin in Human Neoplasia. Cancer 32:1, 1973.
3. Lefrak, E.A., Pitha, J., Rosenheim, S. et al.: Adriamycin (NSC-123127) Cardiomyopathy: Cancer Chemother. Rep. Part 3. 6:203, 1975.
4. Lefrak, E.A., Pitha, J., Rosenheim, S., Gottlieb, J.A.: A Clinicopathologic Analysis of Adriamycin Cardiotoxicity. Cancer 32:302, 1973.
5. Weissler, A.M., Harris, W.S., Schoenfeld, C.D.: Systolic Time Intervals In Man. Circulation 27:149, 1968.
6. Weissler, A.M., Harris, W.S., Schoenfeld, C.D.: Bedside Technique For Evaluation of Ventricular Function in Man. American Journal of Cardiology 23:577, 1969.
7. Rinehart, J.J., Lewis, R.P. and Balcerzak, S.P.: Adriamycin Cardiotoxicity in Man. Ann. Int. Med. 81:475, 1974.
8. Ewy, G.A., Jones, S., Yauger, H., Groves, B.M. and Gaines, J.: Adriamycin Cardiotoxicity: Potentization by Thoracic Radiation. Proceedings of the Oncology-Cardiology Workshop on Adriamycin. Dayton, Ohio, Sept. 29-30, 1975 (in press).
9. Cortes, E.P.: Qualitative EKG changes. Proceedings of the Oncology-Cardiology Workshop on Adriamycin. Dayton, Ohio, Sept. 29-30, 1975 (in press).
10. Cortes, E.P., Lutman, G., Wanka, J. et al.: Adriamycin (NSC-123127) Cardiotoxicity: A Clinicopathologic Correlation. Cancer Chemother. Rep. Part 3. 6:215, 1975.
11. Philips, F.S.: Overview of Work on Mechanisms of Cardiotoxicity; Effects on DNA Synthesis. Proceedings of the Oncology-Cardiology Workshop on Adriamycin. Dayton, Ohio, Sept. 29-30, 1975 (in press).
12. Gilladoga, A.C., Manuel, C., Tan, C.C., et al.: The Cardiotoxicity of Adriamycin in Children. Cancer Chemotherapy Reports. (in press)
13. Merrill, J., Greco, F.A., Zimbler, H., et al.: Adriamycin and Radiation: Synergistic Cardiotoxicity. Ann of Internal Medicine 82:122, 1975.
14. Minow, R.A., Benjamin, R.S., Gottlieb, J.A.: Adriamycin (NSC-123127) Cardiomyopathy — An Overview With Determination of Risk Factors. Cancer Chemother. Rep. Part 3. 6:195, 1975.
15. Jaenke, R.S.: Dose Dependence in Rabbits. Proceedings of the Oncology-Cardiology Workshop on Adriamycin. Dayton, Ohio, Sept. 29-30, 1975 (in press).
16. Eltringham, J.R.: Synergistic Toxicity With Radiation. Proceedings of the Oncology-Cardiology Workshop on Adriamycin. Dayton, Ohio, Sept. 29-30, 1975 (in press).
17. Jones, S.E., Durie, B.G.M. and Salmon, S.E.: Combination Chemotherapy With Adriamycin and Cyclophosphamide for Advanced Breast Cancer. Cancer 36:90, 1975.
18. Lloyd, R.E., Jones, S.E., Salmon, S.E., Durie, B.G.M., and McMahon, L.J.: Combination Chemotherapy with Adriamycin (NSC-123127) and Cyclophosphamide (NSC-26271) For Solid Tumor: A Phase II Trial. Cancer Treat. Rep. (in press).
19. Page, D.L., Caulfield, J.B., Kastor, J.A., et al.: Myocardial Changes Associated With Cardiogenic Shock. New Engl. J. Med. 285:133, 1971.

SEARCH FOR NEW AGENTS IN ARTHRITIS THERAPY

SANFORD H. ROTH, M.D.

The dramatic pace of new developments in medicine has been tumultuous and exciting, in no field of medicine has that growth been more remarkable and consistently accelerating than the pharmacodynamic non-steroidal new drug developments in the field of rheumatology. Within the past decade we have seen the development of an increasing number and variety of antiarthritic drugs ranging from non-steroidal organic acid agents to biological and even antimicrobial agents numbering now well above 70. Most of the new effort in clinical investigative activity has been in the past five years and it is only in the past few years that the first real awareness of such effort has been manifest primarily through international rheumatology meetings and more recently, through reports in the general medical literature that are either now in publication or soon to appear. Within a matter of weeks, probably two and possibly three new antiarthritic agents in NDA will be released upon the medical market place and it is quite certain that they will have an impact upon your practice and in some cases even upon the way you now treat the arthritic. Of consequence also is the large number of developing agents rapidly progressing towards competitive judgment not far back in the wings.

The usual shibboleths that "you will have to learn to live with your arthritis" and the all too comfortable reliance upon aspirin to universally do the job is about to be seriously threatened. Aside from the obvious importance of good general medical care and a sound basic program including appropriate physical therapy, orthopedic assessment, and even psychotherapeutic assessment of the complex problems that the arthritic all too often challenges us with, time limitations mandate that we focus this presentation entirely upon pharmacotherapeutic agents. Aspirin has been the cornerstone of arthritic

From Phoenix-Arthritis Clinic, 4950 E. Thomas Rd., Phoenix 85018 (Reprint requests to Dr. Roth).

Presented at the Arizona Regional Meeting of the American College of Physicians in Tucson, AZ, Oct. 31-Nov. 1, 1975.

therapy for this past century and has clearly filled the therapeutic vacuum as a cheap consistently effecitve, and relatively non-toxic agent for long term therapy in the various forms of arthritis. Gold therapy, available since its discovery forty years ago has found its place, in a very selective manner, in the therapeutic armamentarium of the experienced rheumatologist. Because of its difficult toxicity problems which are not uncommon because of the tight therapeutic-toxicity ratio of this parenteral agent, it has generally not been employed extensively in general medical practice. Nevertheless, in the selected cases in which it finds application, it to date remains the most consistently potent agent in severe proliferative rheumatoid arthritis in its potential to suppress disease and at times lead to extended remission. Immunosuppressive or cytotoxic agents will not be considered here. They have not been approved for general medical use. Indeed, such use outside of controlled protocols in the hands of experienced specialists involve serious medicolegal liability at present. This is appropriate since more extended experience with these agents indicates the very serious risk factors of long term therapy relegating them to a highly specialized place in more resistant destructive rheumatoid disease.

The steroid era deserves special attention as a period in which rheumatology grew in stature because of first awareness of potential major reversal of inflammatory disease symptomatology, as well as attendant immunologic phenomenon. This attracted greater interest in pharmacological activity, towards more effective treatment of disease, but also resulted in a backlash of concern for agents which, despite chemical analog modifications, persistently possessed serious hormonally related side effects mitigating against long term use in many cases. After decades of experience with corticosteroids, a controversy still remains as to their proper place in the inflammatory arthritides.

As a result, increasing efforts have been devoted towards development of nonsteroidal molecules. Pheynlbutazone and Indomethacin were developments of the last two decades which offer indication of the potential of other nonsteroidal but non-salicylate agents. Because of the toxicity problems of the former, and the erratic efficacy and intolerance problems of the latter, such efforts have been multiplied in the direction of the large variety of agents we shall evaluate here.

Table I

Arylalkanoic Acids (phenylacetic-propionic series)

1) Aclofenac (Warner Lambert)
2) Cycloprofen (Squibb)
3) Fenclorac (Rorer)
4) Fenoprofen (Lilly)
5) a) Ilbuprofen (Upjohn)
 b) Flurbiprofen (Upjohn)
6) Ketoprofen (Ives)
7) Naproxen (Syntex)
8) Oxaprozen (Wyeth)
9) Voltaren (Ciba-Geigy)

Indole Series

1) Sulindac (MSD)
2) Prodolic acid (Ayerst)
3) Tolmetin (McNeil)

Fenamic Acid Series

1) Clonixin (Schering)
2) Meclofenamic acid (Parke-Davis)

Benzothiazine derivatives

1) Sudoxicam (Pfizer)
2) Isoxicam (Warner-Lambert)

Others

1) Orgotein (D.D.I.)
2) Clotrimazole (Schering)
3) Miscellaneous compounds

In order to consider this large group of agents within appropriate time limitations, the presentation will obviously be in the nature of an overview. However, we will focus greatest attention upon three agents listed here: fenoprofen, naproxen, and tolmetin, which are the three agents presently in NDA or new drug development. We have had years of major clinical investigative experience with each of these agents at the Phoenix Arthritis Center. Now these agents imminently may appear upon the market place and therefore are those that should be of greatest concern to you. Nevertheless, most of the others are in various stages of late testing and indeed many of them are already appearing, or have appeared, upon the medical market place in many countries abroad, including Great Britain, Europe, and Japan.

Although extensive reports abroad have been presented in the past few years on clinical experiences with the nonsteroidal agents, including recent international rheumatology meetings in Kyoto, Japan, Toronto, Canada, and Helsinki, Finland, there has been little attention to this in the United States until the recent review article by Wilkens and O'Brien.[1] Otherwise, the non-rheumatology medical publications have to date been silent on this tempest of pharmaceutical investigative developments.

Yet the first agent of this new generation of newcomers, ibuprofen, has already been available on the medical market place for this past year and it surely has not been ignored clinically. It has been extensively prescribed and, though all too often found wanting in efficacy, has provided important alternatives in arthritic therapy because of its low toxicity. Three other agents, naproxen, tolmetin, and fenoprofen should be released shortly. It seems appropriate to present impressions from some of the extensive experience to date with these compounds.

Obviously it would be beyond the scope of this review article to engage in a voluminous presentation of the results of extensive clinical investigation of so many agents. Our purpose is to focus on the three agents. The remainder listed are not sufficiently advanced in testing to warrant consideration here.

1. Naproxen: synthesized as a non-nitrous compound to avoid toxicity. Initial animal studies confirm lack of significant toxicity and this has subsequently been confirmed multiple times with clinical studies including difficult to treat rheumatoid arthritis patients with drug intolerance and gastrointestinal problems.[2] Controlled studies indicated a satisfactory range of efficacy in usual studies against placebo, aspirin, and also corticosteroid sparing effect. The drug was released on the British market in the 250 mg b.i.d. range. Long half-life allows this less frequent dosage. Rapid renal excretion of dosage beyond 750 mg daily allows safety in total dosage up to, and at times exceeding, a 1000 mg daily.

Released in Great Britain in October 1973, the agent quickly captured over 20 percent of the nonsteroidal anti-inflammatory drug market. However, in the spring of that year a series of not well documented cases were reported in the British literature of gastrointestinal bleeding in generally elderly patients. This caused great concern at the time; however, there have been no such follow up reports in the interval following this. Furthermore, a clinical study at the Phoenix Arthritis Center of over three years' duration of 58 patients with rheumatoid arthritis complicated by upper gastrointestinal disease treated with naproxen in dosage averaging between 500 mg and 1000 mg daily has demonstrated remarkable safety and tolerance to date. Naproxen appears to be the least toxic of the potent nonsteroidal anti-inflammatory agents and because of flexibility of an unusually safe dosage range offers important analgesic as well as anti-inflammatory properties to commend it as a major new agent.

2. Tolmetin: structural advantage over the indoles appears to have been achieved by this pyrrole which lacks the serotonin nucleus of the former. Extensive clinical experience suggests this agent to be relatively devoid of the common central nervous system side effects which plague indomethacin and yet clinically as, or more active, as a potent anti-inflammatory agent in rheumatoid arthritis and rheumatoid variant disease including juvenile rheumatoid arthritis.[3] The drug is at least somewhat ulcerogenic. But it has interesting interaction with APAP suggesting the potentiation of analgesic and antirheumatic properties. Also a desirable lack of anticoagulant potentiation when given in combination with coumadin has been determined. As characteristic of most of the more potent oral antirheumatic agents, the primary side effects will be upper gastrointestinal. It contrasts with other agents, however, in controlled study, by demonstrating clear superiority over aspirin. Corticosteroid sparing effects in some instances allow complete withdrawal of steroids. Such properties suggest tolmetin will be a major agent in inflammatory arthritis treatment with a relatively safe dosage range between 800 and 1600 mg taken q.i.d.

3. Fenoprofen: the calcium salt of this compound has overcome some of the incomplete absorption problems of the sodium salt of the parent compound. Nevertheless, clinical studies have not demonstrated clear cut efficacy over

aspirin. The agent does appear to be most efficacious at the 2400 mg range requiring 12 tablets on a q.i.d. basis. At this dosage upper gastrointestinal side effects are not uncommon, although important toxicity and ulcerogenic potential may be minimal.[4] This agent appears most closely to represent itself as an important salicylate substitute for these reasons.

DISCUSSION

As there is no animal model that can be extrapolated to rheumatoid arthritis in man, it is not surprising that the development of anti-inflammatory agents appears to be literally hit and miss. Furthermore, it has been claimed that anti-inflammatory effect is not equivalent to disease suppression, nor prevention of joint destruction and maintenance and improvement of function, all primary desirable goals in the management of arthritis. Furthermore, the mechanisms of action of the various agents discussed on a structure-activity basis are at present superficial and highly empirical. A recent review indicates that most of the measurements are after the fact and non-specific. It is of definite interest that naproxen is a potent inhibitor of prostoglandin synthetase activity and that tolmetin may act as a substrate in tryptophane metabolism that may alter biogenic amine activity and ultimately alter the kyrurinine pathway that is often abnormal in rheumatoid disease. Meclofenamic acid may suppress C'3 complement activity. Yet all these things are piecemeal observations, and the acute through chronic granulomatous reaction of inflammatory arthritis actually involves a cascading series of these events. Thus, looking at one particular event, at one point in time, may very well not explain the real mode action of a particular agent.

For that reason should we take the cynical view that we are merely witnessing an undisciplined grasp at the estimated $500,000,000 total world market potential for nonsteroidal anti-inflammatory drugs resulting in no real substantive alteration in the therapeutic armamentarium? We must weigh this against the true lack of flexibility in the present limited scope of agents available for arthritic management.

Furthermore, it must be recognized that there appear to be subgroups of "responders" in the spectrum of problems we categorize under inflammatory arthritis. In the absence of etiologic answers our understanding of present pharmacodynamics are clearly limited to measurements of unsatisfactory parameters of disease activity. Based on such empirical observations we make clinical decisions. From such decisions and observations we see over and over that the patients with rheumatoid arthritis consistently respond to steroids and salicylates albeit to varying degrees, at varying dosages. The same observations do not hold true for the nonsteroidal agents discussed, however. In this case there appears to be a varying percentage of patients that respond in a major way to different agents. We as yet have no reliable guidelines to single out such responders for each particular agent, except on a trial and error basis. Furthermore, a patient that responds well to one agent may for unknown reasons not respond to another. If we agree to this common experience, then we must accept the value of a flexible regimen of multiple agents in the face of a difficult disabling chronic disease that we cannot yet treat well. Certainly the "side effects" of the disease are often serious, and the cost of the disease in damage and disability goes beyond the dollars and cents of a particular medicine—if it is effective. For this reason we can welcome this flurry of pharmaceutical investigative development.

The field has been truly crowded as the contenders jostle for position. The race has already started. And now one hopes that in the long run, the ultimate winner will be the still suffering arthritic patient.

REFERENCES

1. Wilkens, R. F. and O'Brien, W. M., New Nonsteroidal Anti-Inflammatory Drugs (NSAID), Bull. on the Rheumatic Diseases, Vol. 24, No. 8-9, 1973-74.
2. Proceedings of an International Medical Symposium, J of Clin. Pharmacology, Vol. 15, No. 4, April 1975, Part 2.
3. Tolmetin, New Nonsteroidal Anti-Inflammatory Agent, Exerpta Medica, ICS, No. 372, 1975.
4. Clinical Aspects of Fenoprofen Therapy (Symposium Issue) Publication pending. J of Rheum. 1975.

DIAGNOSIS AND MANAGEMENT OF ETHANOL WITHDRAWAL SYNDROMES

TERRY A RUSTIN, M.D.

Ethyl alcohol is a most interesting drug. Seventy-five percent of American adults use it, 10% of them to excess—about 10 million persons. It has been known since antiquity as a sedative which releases inhibitions and worsens judgement and coordination. We also know it to be a food, supplying seven kilocalories per gram, as a central inhibitor of anti-diuretic hormone; and as direct or indirect toxin to many organ systems.

Shakespeare summarized several of these effects in an exchange between Macduff and the Hall Porter in the play Macbeth:

> Macduff: What three things does drink especially provoke?
>
> Porter: Marry, Sir, nose-painting, sleep and urine. Lechery, Sir, it provokes and unprovokes; it provokes the desire, but it takes away the performance.

Thus did Shakespeare recognize the disinhibiting, sedative, diuretic, and dis-coordinating properties of ethanol.

Ethanol actually inhibits antidiuretic hor-

From: 3735 N. Tres Lomas Pl., Tucson AZ. (Reprint requests to Dr. Rustin).

Presented at the Arizona Regional Meeting of the American College of Physicians in Tucson, AZ, Oct. 31-Nov. 1, 1975.

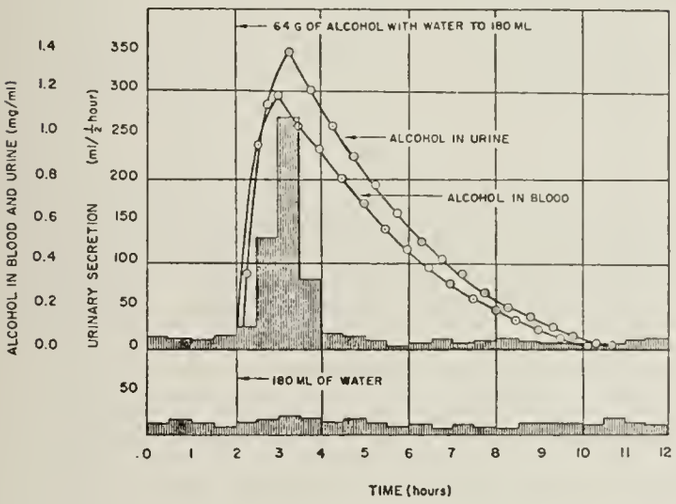


Figure 1

(reporduced from Goodman and Gilman, The Pharmacological Basis of Therapeutics, The Macmillan Company, c. 1970) (after Haggard, Greenberg and Carroll, 1941)

Lower shaded area shows urine produced every 15 minutes by a control subject after ingestion of 180ml of water. Upper shaded area shows urine produced every 15 minutes by test subject after ingestion of 64gms of ethanol with water to 180ml. Curves show ethanol levels in blood and urine. Note that diuresis occurs while the blood ethanol levels are rising.

mone only when the blood ethanol level is rising. Haggard demonstrated this in 1941 (Figure 1). In that study, a subject ingesting 64 grams of ethanol in water to 180 milliliters put out far more urine while his blood ethanol level was on the rise, than did the control subject taking only 180 milliliters of water. However, when the blood ethanol level began to fall one hour after ingestion, urine production decreased below control values. This is important in ethanol withdrawal, where the patient is actually *volume expanded* in most cases, not volume depleted.

An individual addicted to any drug demonstrates these characteristics: tolerance, drug-seeking behavior and withdrawal. *Tolerance* is the finding that increasingly large doses of the drug are required to produce a constant effect, and that the same dose produces less of an effect over time. *Drug-seeking behavior* is usually characteristic for the drug and for the individual, and incorporates the concept of "psychological addiction." *Withdrawal* is the consistent and



Figure 2

100ml of absolute ethanol is contained in a half pint of whiskey, a fifth of wine, or eight cans of beer. Consumption of this amount in one day constitutes the definition of "heavy drinking."

reproducible syndrome encountered when adequate doses of the addicting drug are not provided. With ethanol, the withdrawal syndromes can occur when the blood ethanol level drops from a stable level to zero, or when it drops from a very high level to a lower one. Ethanol addicts are usually heavy drinkers until end-stage Laennec's cirrhosis is reached, at which point the liver is unable to metabolize the ethanol, and a smaller intake produces intoxication. I define a "heavy drinker" as one who consumes the equivalent of 100 milliliters of absolute ethanol daily. This is the amount contained in a half pint of whiskey, a fifth of wine, or eight cans of beer (Figure 2). Actually, many ethanol addicts consume up to, or even more than, 500 milliliters of absolute ethanol daily, which is the amount contained in a quart of whiskey, a gallon of wine, or a case and half of beer (Figure 3).

Maurice Victor and Raymond Adams reported a pioneering study in 1953, in which 162 heavy drinkers were observed in ethanol withdrawal. Sixty-eight patients had seizures. 50 patients had a benign course which tended to begin early, consisting of tremulousness, transient hallucinations, but no confusion. Another group of 44



Figure 3

500ml of absolute ethanol is contained in a quart of whiskey, a gallon of wine, or a case and half of beer. Many ethanol addicts consume this much ethanol every day.

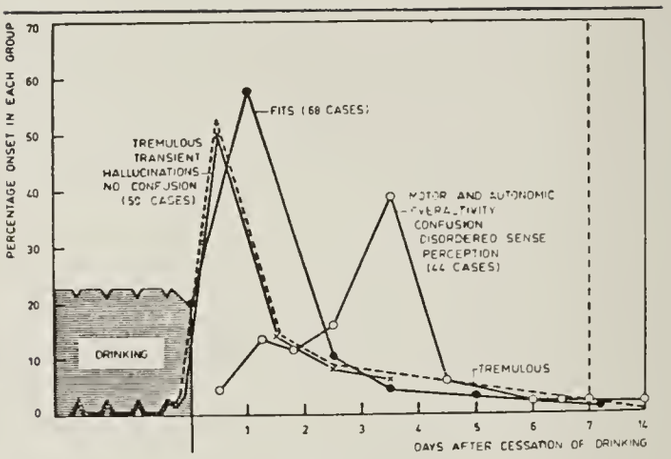


Figure 4

(reproduced from Victor and Adams, 1953)

Of 162 patients in ethanol withdrawal, 68 had seizures; 50 had tremulousness and transient hallucinations, but were not confused; and 44 had motor and autonomic overactivity, confusion and disordered sense perception.

patients had a more severe abstinence syndrome, occurring later, with motor and autonomic overactivity, confusion and disordered sense perception (Figure 4).

Drawing on the work of Victor and Adams, and others, I use this simple classification of ethanol withdrawal syndromes: the benign syndrome occurring early I call the "Minor Withdrawal Syndrome"—and the severe syndrome occuring later I call the "Major Withdrawal Syndrome"—commonly known as "Delirium Tremens." Since seizures may occur in either group, they are not a differentiating point.

Minor Withdrawal Syndrome

The Minor withdrawal syndrome begins 6 to 24 hours after cessation of drinking. It is essentially free of mortality, but since it occurs to essentially every ethanol addict after overnight abstinence, the incidence approaches 70 cases per thousand adults *every day*.

These are the findings: moderate agitation; non-specific somatic complaints such as malaise, headache, and gastro-intestinal upset; and moderate tremulousness. Hallucinosis is usually visual. Seizures are common; they are almost always self-limited and do not necessarily mean that the patient has a seizure disorder. The patient is oriented, recognizes the nature of his illness, and seeks help. Usually, he treat himself with beverage ethanol and never sees the physician—unless he does not have access to ethanol, as when he is confined in a social or business situation, in the hospital or in jail, when he lacks funds to purchase ethanol, when he is too ill to seek it, or when he is trying to stop drinking. The patient in minor withdrawal will give an accurate and sincere drinking history—the best he will ever give.

Major Withdrawal Syndrome

Let us contrast this with the major withdrawal syndrome. This is a serious condition associated with a long and heavy drinking history, intercurrent illness and relatively poor nutrition. The cause is unknown. It is uncommon, although reliable incidence figures are not available. It usually occurs 36 hours to 5 days following cessation of drinking. A mortality of 15% is generally accepted.

Major ethanol withdrawal is awe-inspiring. The patient is a flailing, agitated, disoriented bundle of energy, with tachycardia, tachypnea, hyperthermia, hypertension and profound diaphoresis. These hypermetabolic aspects of the syndrome, and the resulting metabolic derangements, are potential causes of death. Hallucinosis is frequent and vivid and can be tactile as well as visual. Seizures frequently initiate an episode of major withdrawal and are not seen subsequently. The patient is critically ill, and with the exception of brief lapses into orientation, is generally unreachable.

Treatment—Minor Withdrawal

Once the diagnosis of minor or major withdrawal is made, treatment is instituted. Of course, the patient with the minor withdrawal syndrome will rarely present for treatment, but the overwhelming incidence of this problem makes it inevitable that we will all see many such patients. Treatment of minor withdrawal is based on combating the agitation and discomfort of withdrawal as quickly, safely and inexpensively as possible, with attention to inter-

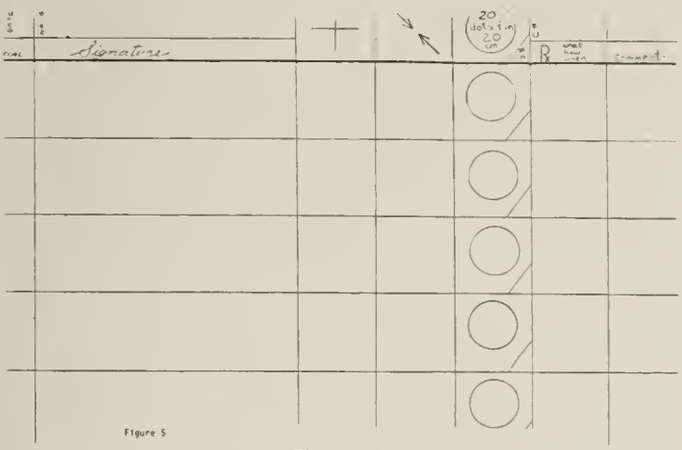


Figure 5

A flowchart of the response to treatment is helpful in the management of the minor ethanol withdrawal syndrome. The nurse or doctor sees the patient at regular intervals, records the treatment given, and has the patient write his signature and reproduce several figures of increasing complexity. The patient's ability to perform these tasks is an objective measure of his progress.

current problems, and with subsequent referral to a treatment facility for the ethanol addiction. I routinely give a large parenteral dose of thiamine, and frequently, oral antacid to these patients. If there is any question of hypoglycemia, blood sugar is drawn and intravenous glucose is given immediately following the thiamine. This sequence is necessary, because a glucose load in a thiamine-deficient patient can precipitate a Wernicke's encephalopathy.

Since these patients are already agitated, it is helpful to minimize extraneous activity around them. This is not to state that they should be put in a corner and forgotten; a central point of treatment is to follow the clinical response. This is best done by having the same nurse check in on the patient at regular intervals, using a flowchart to monitor the patient's coordination and tremulousness (Figure 5).

Sedation is the mainstay of pharmacotherapy in this disorder. I use oral chloral hydrate whenever possible, in a dose of one gram every 20 to 30 minutes in the first and second hours, and in decreasing doses thereafter. Chloral hydrate is inexpensive, effective, well-tolerated and practical; it also possesses the theoretical advantage of being metabolized via the same pathways as ethanol itself. The dose is decreased over several hours because chloral hydrate is a short-acting drug, and a patient initially loaded with chloral hydrate may go into chloral hydrate withdrawal several hours later.

I use the oral route whenever possible, because of simplicity and cost. However, the oral route may be impractical, because the patient is belligerent, or seizing, or vomiting; in this situation, an intravenous line is required. Administer thiamine initially, and then glucose solution at a slow rate; recall that the patient is more likely to be volume overloaded than volume depleted, even though he complains of thirst. Ethanol is volatile, and with breathing, the mucous membranes of the nose and mouth become dry, giving the subjective impression of thirst, even in an edematous patient. I prefer chlordiazepoxide as the sedative drug in this situation, because of its rapid onset when given intravenously, smaller amount of sedation for anti-withdrawal effect, and wide margin of safety; it also has anti-seizure potential. As with chloral hydrate, there is cross-tolerance with ethanol, and reasonably large doses of chlordiazepoxide may be required—perhaps 200 mg in the first hour, given as 50mg to 100mg initially, and 25mg every 20 to 30 minutes thereafter for the first two hours.

In the rare instance when parenteral treatment is necessary but an intravenous line cannot be started immediately, the drug of choice is droperidol, a rapidly-acting butyrophenone, in doses of 2 milliliters intramuscularly every ten minutes for up to three doses; dystonic reactions are common with continued administration, and therefore, this should be considered a drug for long-term use.

Intramuscular chlordiazepoxide is containdicated because of its slow absorption and low peak levels. This was well shown by Goldblatt and colleagues in their 1974 study, in which 50 mg of oral or intramuscular chlordiazepoxide was given and blood levels were measured for three days. The intramuscular route proved to result in delayed peaks, up to 12 hours after administration, with maximum levels only half that obtainable from a single oral dose (Figure 6). When time is of the essence, *intramuscular* chlordiazepoxide has no place.

As a general rule, uncomplicated minor ethanol withdrawal is treatable in four hours. If the patient has not improved sufficiently to be discharged by four hours, then either he has received insufficient doses of sedative, or there is a concomitant process ongoing. Another, rarer, cause of treatment failure is the syndrome resulting from the simultaneous ingestion of ethanol and disulfiram (Antabuse®). Patients will occasionally drink after having taken disulfiram, will suffer the disulfiram-ethanol reaction, and will subsequently go into ethanol

withdrawal. The effects of the disulfiram reaction continue, however, and can be life-threatening.

Treatment—Major Withdrawal

With the major withdrawal syndrome, the approach to the patient and the goals of treatment are different. This is not simply a bothersome reaction in an otherwise healthy individual; this is a serious medical emergency. Treatment is directed specifically to each element of the hypermetabolism, as well as to the agitation. Treatment varies widely; I prefer high-dose chlordiazepoxide, and up to 800mg intravenously in the first hour may be required. Carefully selected intravenous fluids must be given. Very close monitoring of the clinical condition is essential.

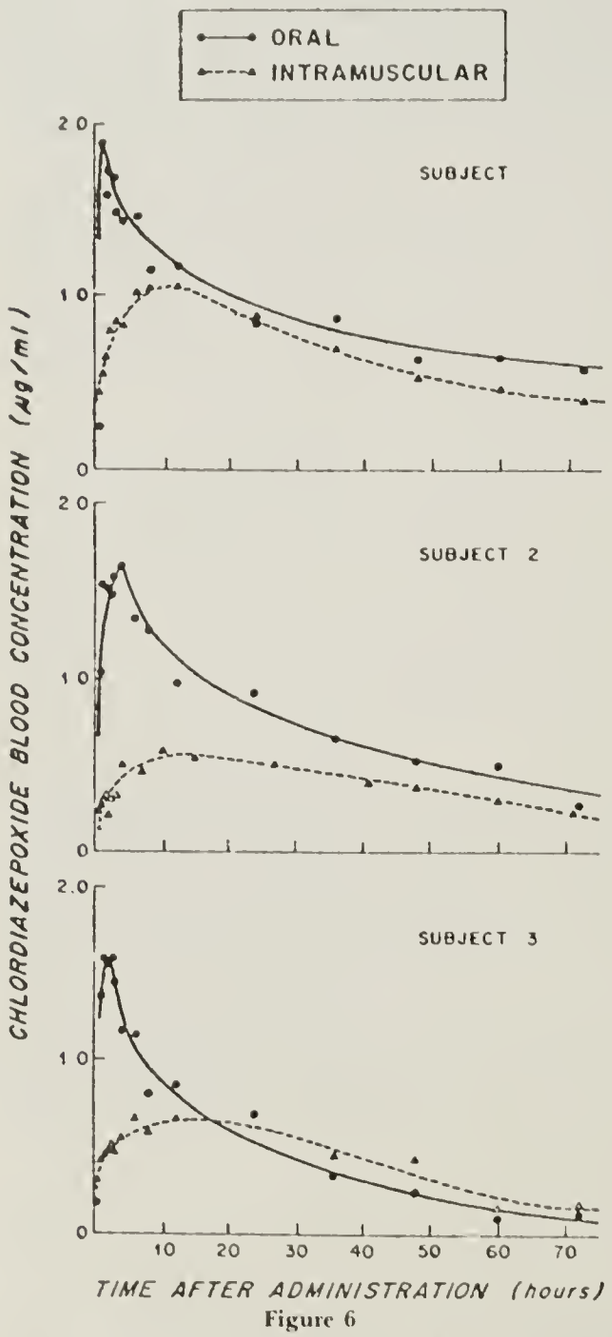


Figure 6

(reproduced from Greenblatt, Shader and Koch-Weser, 1974)

Chlordiazepoxide blood levels were measured for 72 hours after oral and intramuscular administration of 50mg chlordiazepoxide to healthy subjects. Intramuscular administration proved to result in lower peak levels and delayed rise in blood levels, as compared to oral administration, which resulted in brisk rises in blood levels. Half-lives were comparable. There is probably no indication for intramuscular chlordiazepoxide in any form of ethanol withdrawal, although intravenous chlordiazepoxide is extremely useful.

The hypermetabolic factors can lead to death; therefore, these must be treated specifically. Hyperthermia must be combated aggressively, using a cooling blanket, acetaminophen suppositories and sponging. Hypertension is best managed with intravenous diazoxide or nitroprusside, both of which are direct dilators of periperal vascular smooth muscle. Unstable cardiac rhythms can lead to ventricular fibrillation. Status epilepticus is rare, but can occur, especially as a result of metabolic derangement—hyponatremia, hypernatremia, hypoglycemia, hypochloremic alkalosis, lactic acidosis, "idiopathic" acidosis, or hypomagnesemia. The hyperthermia and diaphoresis can lead to volume depletion. Self-inflicted trauma often occurs when the delirious patient has vivid hallucinations and strikes at imagined creatures crawling on his body; chemical and physical restraint, and gentle reality orientation, are necessary. Iatrogenic complications are primarily aspiration (avoidable by restraining the patient on his side or abdomen instead of his back), and oversedation leading to respiratory arrest.

While the patient is being treated for his major withdrawal, a search for underlying disease should be instituted. The medical problems most often seen with excessive ethanol use are immediately suspect. Liver failure, infection, hematopoetic defect or coagulopathy, cardiomyopathy, pancreatitis, gastro-intestinal bleeding, intracranial lesion, or a host of other problems might be found. The underlying disorder should of course be treated along with the withdrawal syndrome.

Conclusion

Minor ethanol withdrawal is a common and benign illness beginning soon after cessation of drinking, with agitation, tremulousness, malaise, and seizures, but with complete orientation; it is best treated with oral chloral hydrate. Major ethanol withdrawal is a rare and serious

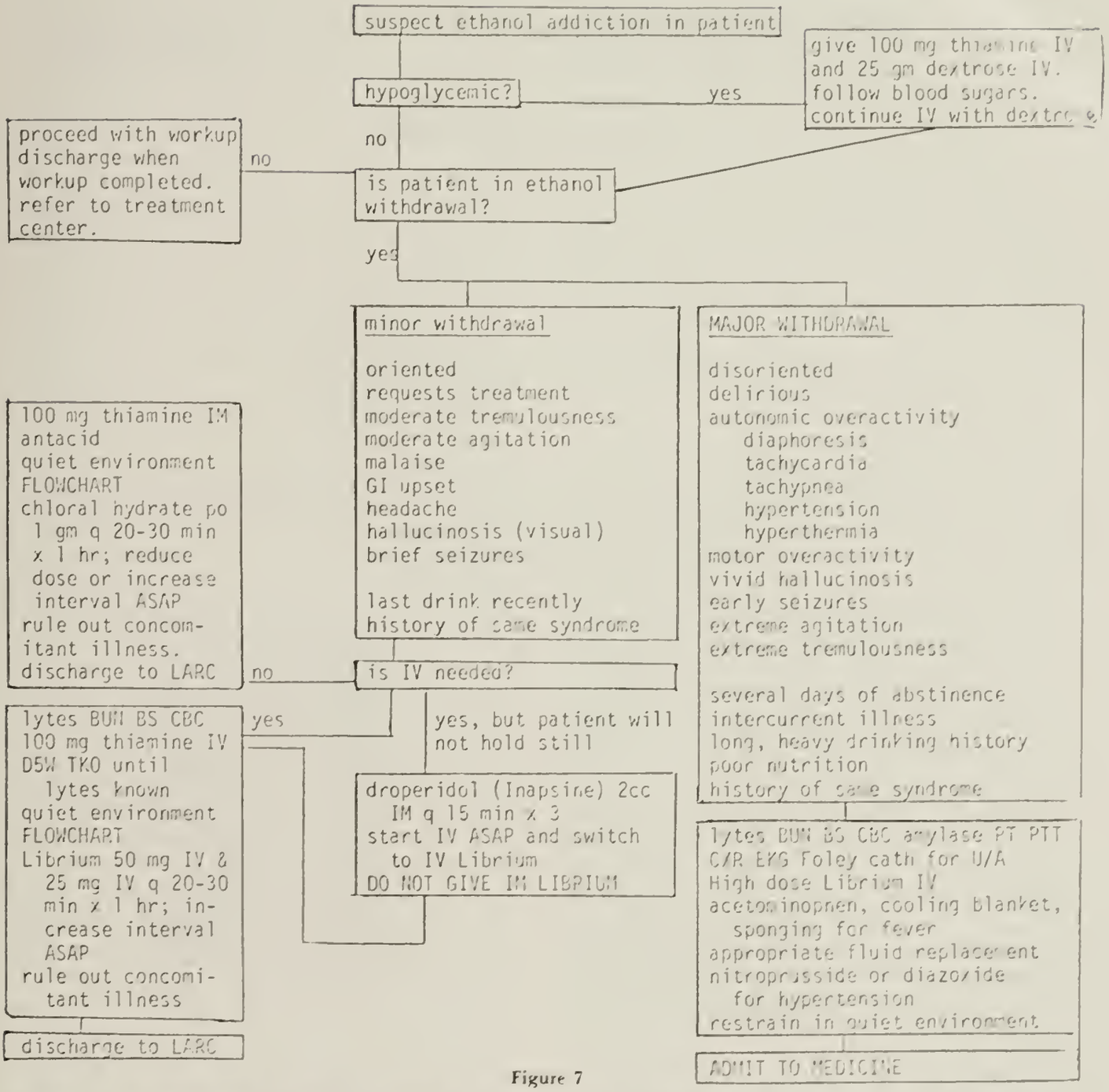


Figure 7

Flowsheet for management of ethanol withdrawal. LARC = Local Alcoholism Reception Center, a detoxification facility. FLOWCHART refers to a form such as is reproduced in Figure 5.

illness, beginning long after cessation of drinking, with hypermetabolism, severe agitation, disorientation, delirium, and a 15% mortality. It requires hospital admission, intravenous chlordiazepoxide, and attention to the hypermetabolic factors, with a search for concomitant disease.

Ethanol withdrawal syndromes are serious medical problems, and deserve the rational approach to diagnosis and treatment that is accorded to other medical diseases.

Nonproprietary Names and Trademarks of Drugs.

Acetaminophen — Tylenol, and others
Chloral Hydrate — Noctec, and others
Chlordiazepoxide — Librium
Diazoxide — Hyperstat
Disulfiram — Antabuse
Droperidol — Inapsine
Nitroprusside — Nipride

Bibliography available on request. Write to: Terry A. Rustin, M.D., 3735 N. Tres Lomas Place, Tucson, Arizona 85715

A PROGRESS NOTE '76 STYLE

"I cannot comprehend how any man can want anything but the truth."
Marcus Aurelius

JOHN W. KENNEDY, M.D.

For the first time in the history of living man or woman,—the Association has its membership firmly united on a single issue. Despite the valiant efforts of those who have "carried the burden" in the past, nothing has engaged the attention and imagination of every member, as well as their pocket books, as has the problem of malpractice insurance coverage.

The special session of the Arizona legislature dealing with malpractice has closed.

Whatever the legislative results, one thing is certain, Jack Brooks and his select committee have not bent motives or truth to placate or offend. Even a cursory perusal of the press coverage clearly showed the day to day vacillation and shifting of the political winds. This was an attempt to counter the careful, sagacious program the committee proposed. There was no vacillation, no effort spared to persue a reasonable proposal to the legislature, all was straight forward, but deliberate.

You may have noticed that after the appointment of the committee, there was a stunning silence. No press releases, no television spots, no charges or counter-charges about who sent this revengeful, malpractice monster amongst us to destroy the very essence of medical practice; and to sow mistrust and suspicion amongst our patients concerning their physician's competence and motives.

There was none of this whimpering at windmills, but a careful search and study for all the possible legislative alternatives was made. We can be confident that never, never can it be said that there was any acceptance of side-deals or speaking-with-forked-tongue permitted by this committee chairman, or the select committee members. Can their opponents savor the same pride in their actions?

Never in my experience, have the physicians of Arizona stood together with such solidarity. Whatever of our personal reservations, everyone felt that first things should be put first, and anyone who attended the mass meeting of the physicians in Scottsdale surely must have been impressed.

There was not a county, city, a hamlet, a specialty, or a variety of primary physician who was not represented together with many co-workers in the health field; nurses, hospital technologists, all of these and other representatives of the health provider professions were present. To many this was a turning point in the committee's efforts.

Now all understood that Jack Brooks "Could not comprehend how anything but the truth," and intellectual honesty could or would be tolerated.

There followed grueling day and night preparations for the appearance at legislative com-

Editor's Page

EDITOR-IN-CHIEF
John W. Kennedy, M.D.*
ASSOCIATE EDITOR
William B. McGrath, M.D.*
EDITORIAL ASSISTANT
Joan Bruner

EXECUTIVE DIRECTOR AND MANAGING EDITOR
Bruce E. Robinson

EDITORIAL BOARD
Robert Barbee, M.D.
Marshall B. Block, M.D.
M. David Ben-Asher, M.D.
Andre J. Bruwer, M.D
Melvin L. Cohen, M.D.
Arthur V. Dudley, Jr., M.D.
Walter V. Edwards, Jr., M.D.*
C. Herbert Fredell, M.D.
Kenneth E. Johnson, M.D.
Gerold Kaplan, M.D.*
George Lastnick, M.D.*
Robert F. Lorenzen, M.D.
Darwin W. Neubauer, M.D.
Stanley H. Nordmo, M.D.*
David Pent, M.D.*
Donald A. Polson, M.D.
William F. Sheeley, M.D.
Michael L. Schreiber, M.D.*
Maurice L. Sievers, M.D.
Paul L. Singer, M.D.
Ernest Smith, M.D.
David C. H. Sun, M.D.*
Eleanor A. Waskow, M.D.
*Publishing Committee

mittees. How this must have seared the soul of a physician dedicated and trained to succor the sick, to reduce or abandon his or her practice to make this gallant and searching effort to salvage private practice in Arizona.

No, the issues are not all resolved; there is still the problem of constitutional changes, which may be required, and further legislative action needed.

This may bring this issue more directly into your very own office. Petitions may be needed and votes solicited. Just as the practitioners in Australia stemmed the tide, by physician to patient advice and education, so you—each of you may be called upon to serve.

Any physician who believes herself or himself "too busy" to participate may eventually find the privilege to practice medicine, as we now know and cherish it, vanished.

"Bureaucracy is a giant mechanism
operated by pygmies"
Honore De Balzac (1799-1850)

Dean's Page

A LONGITUDINAL EPIDEMIOLOGICAL STUDY OF RESPIRATORY DISEASES



NEAL A. VANSELOW, M.D.

In 1971, a Specialized Center of Research (SCOR) in Pulmonary Diseases was established at the College of Medicine. The SCOR, supported by a grant from the National Heart and Lung Institute, is operated by the College's Division of Respiratory Sciences and brings together investigators from many different departments and disciplines in a collaborative study of airways obstructive diseases.

One of the major projects of the SCOR is a longitudinal epidemiological study of nearly 1,700 Tucson households containing approximately 4,000 individuals. Participants have provided extensive information concerning respiratory symptoms, known diseases, family and residential histories, occupational and environmental exposures, socio-economic status, and smoking habits. Tests performed include lung function measurements, allergy skin tests, vectorcardiograms, cocci and histo skin tests, and alpha -antitrypsin studies. Subjects have completed three annual evaluations, and long-term follow-up is planned.

Longitudinal observations will be needed to meet the overall objective of the study—delineation of causes, natural histories, and means of early detection and prevention of asthma, chronic bronchitis, and emphysema. But even the cross-sectional data already provide important information.

As anticipated, rates of most respiratory disorders are much higher in Tucson than in the United States as a whole. But this is only partially explained by in-migration of already infected individuals; even Tucson natives have higher than expected rates, especially for asthma and allergic rhinitis. High rates of allergy skin test reactivity are also noted, especially among young adults, and such reactivity is associated with high prevalences of a variety of respiratory problems, not all of which are generally considered "allergic." For example, nondescript wheezing complaints and abnormalities of lung function are more common in skin test reactors.

Smoking and atopy appear to have additive effects, suggesting that atopy may predispose to the bronchoconstrictor effects of cigarette smoke.

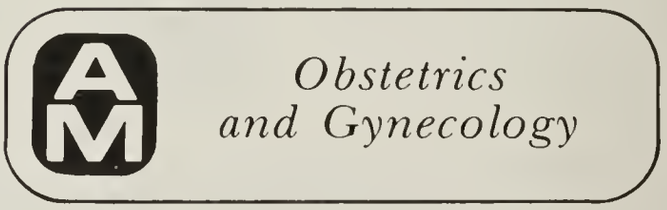
Neither measurements of serum trypsin inhibitory capacity nor Pi phenotyping indicates that heterozygocity for alpha$_1$-antitrypsin deficiency is a significant risk factor for airways obstructive diseases in the general population, even among smokers. On the other hand, a variety of occupational exposures, social factors, and heavy use of aerosol products appear to add to the likelihood of respiratory symptoms. Also, several lines of evidence suggest that childhood respiratory illnesses "set the stage" for later development of airways obstructive disorders.

Detailed analyses of maximum expiratory flow volume (MEFV) curves fail to indicate that the location of abnormalities in the curve is characteristic of any particular type of respiratory problem. Abnormalities late in the MEFV curve, considered by some to indicate "small airways disease," are noted at least as often in subjects with reactive airways diseases as in smokers or subjects with chronic bronchitis. Neither MEFV curve nor closing volume measurements appears to add clinically useful information to measurements made from simple spirometry. Methods currently recommended for "early detection" of chronic obstructive pulmonary diseases do not appear reliable, and further observations on the natural history of this disorder are needed to allow precise early diagnosis.

As in other studies, chronic productive cough is closely and quantitatively related to cigarette smoking, but the pattern of "smoker's cough" is different in Arizona than in some other locales. It is less regularly productive of phlegm, restricted to the morning hours, or seasonal. In Tucson, women have nearly as many respiratory complaints as men with equivalent smoking habits. No effect on non-smokers by smokers in the household could be demonstrated, however. While some excess of respiratory symptoms is noted in children with smoking parents, most of this is eliminated when the symptom status of the parents is taken into account.

Many more years of follow-up will be needed to determine the relative importance of the many risk factors involved in the genesis of airways obstructive diseases. The total SCOR program provides a unique opportunity to study these factors since it allows developments and findings in other SCOR projects to be applied and tested in the general population study. Projects on improved radiographic imaging, experimental physiology, effects of acute respiratory infections of infancy and childhood, immunological mechanisms, and clinical-epidemiological correlations are included in the total program. In conjunction with the large-scale epidemiological study just described, these provide a closely integrated multidisciplinary approach to the study of airways obstructive diseases.

Neal A. Vanselow



THE LOW BIRTHWEIGHT INFANT — A FOLLOWUP

E. O. R. REYNOLD, M.D.

The obstetrician is occasionally faced with the dilemma of delivering an infant weighing < 1500 gms, the concern being the quality of life to be expected for the infant. Will a significant mental or physical handicap negate the intensive perinatal and neonatal effort? Dr. Reynolds, a recent visitor to Phoenix, is a consultant Pediatrician at the University College Hospital in London. In his capacity as the physician in charge of the Neonatal ICU an intensive followup was undertaken to help answer this burning question. ED.

Ten years ago the prognosis for low birth weight (LBW) infants, those with weights < 1500 gms at birth, was thought to be almost hopeless. In followup studies published on infants who weighed < 1500 gms during the 1950s and 1960s, the chances of major handicaps sufficient to interfere with normal function in society was between 1/3 and 2/3 for these babies. The suggestion was made around that time that there was no point in providing intensive care methods for LBW infants since this would certainly increase the number of handicapped children.

The worst followup studies published in England showed that, as the survival rate of LBW babies increased, so did the percentage who were significantly handicapped. So in the early 1960s a climate of opinion prevailed that downgraded the value of neonatal and perinatal intensive care. Also, it was felt that the reason LBW babies turned out to be handicapped was that they had been irreversibly damaged in-utero from some severe insult. So the use of neonatal intensive care would therefore be pointless.

However, some workers took a different view: many of the handicaps occurring in very low birth weight babies developed because of preventable perinatal events, e.g. hypoxia. In 1965 a program of intensive care was begun in our hospital which was designed to foresee and prevent, as well as treat, any abnormality of the LBW infant which might be lethal or potentially damage the brain. By the beginning of 1966 mechanical ventilation was absolutely routine for babies under 1000 gms who were in severe respiratory failure, babies were being fed shortly after arrival on the unit, etc..

The first objective was to determine if the introduction of intensive care methods would have any impact on the survival rate of the LBW infant. Our survival rates for inborn LBW babies were compared with the national rates of survival for babies of similar LBW. For every year after 1966 our survival rates for inborn infant who weighed < 1500 gms was above the national average. In the years 1966-1973, 55% of our inborn LBW babies survived versus 41% in England and Wales. So at least tentative evidence existed that the introduction of neonatal intensive care was beneficial. Survival rates for 1973-1974: 500-1000 gms - 32%; 1000-1500 gms - 75%; 1500-2000 gms - 95%; 2000-2500 gms - 96%. Perinatal mortality for 1973-1974 was 15.4. Most of the perinatal deaths were in babies who weighed < 1000 gms or had congenital malformations.

The management of LBW babies in our hospital is essentially the same as in the United States. Optimal cooperation exists between Obstetricians, Anesthiologists, and nurses from the time the sick babies are delivered. Consultation between Obstetricians and Pediatricians is obtained if a decision regarding mode of delivery is necessary. The nursery is alerted before the delivery of a sick baby. All high risk infants are monitored during labor. Our threshold for Cesarean Section in the LBW infant is low. Our experience over the last 10 years has demonstrated substantially higher survival in the LBW baby delivered by Cesarean Section than with vaginal delivery. A difficult obstetric problem exists regarding the decision for operative delivery in the LBW infant. Where do you draw the line? How early in gestation should one perform a Cesarean Section to save a baby? It's a very difficult concept. A Pediatrician is present at all deliveries to assist in resuscitation at birth. Intravenous bicarbonate is used with caution because of its possible implication in increasing intracerebral hemorrhage.

In addition to inborn babies, infants and mothers are transported from a rather extensive area. An active system of maternal transport has been established with excellent cooperation from Obstetricians. They are very willing to transfer a high risk mother who is in early labor in an institution with no intensive care facilities available. Transport is effected either by ambulance or helicopter. At many of these hospitals staff from our department is present at the delivery of a sick baby. The neonatal transport team includes a physician, and one or two nurses (nurses are quite capable of transferring babies and performing ventilation and intubation procedures). The transport incubator has a ventilator which monitors body temperature, heart rate, and inspired 0_2 concentration. Forty nine percent of the babies transferred to our hospital during the last 3 years actually required mechanical ventilation during transport. Our neonatal ICU is the same fantastically crowded environment seen elsewhere. After arrival the problems depend on the reason the baby is low birth weight. As assessment is made of the problem of the baby due to the immaturity of all body systems. A regimen is then organized to deal with the particular aspects of immaturity which may be lethal or cause brain damage. Adequate fluid and calories are administered early. Recurrent apnea is common in very low birth weight babies due to the immaturity of the central nervous system. Asphyxial episodes associated with apnea may be the cause of intraventricular hemorrhage, now the commonest cause of death in pre-term infants. Asphyxial attacks cause increases in both arterial and venous pressure. Connecting vessels are present between the arteries and veins in the head which seem to rupture very easily. The avoidance of apneic attacks is absolutely

essential in preventing intraventricular hemorrhage. Close monitoring, stimulation to breathe, CPAP, endotracheal intubation are all employed.

At that time (1966) it appeared that the salvage rate for LBW babies was increasing, but the concern was expressed that many of the survivors would have significant mental or physical handicaps. Therefore, a followup study was started for high risk infants, particularly dealing with babies who weighed < 1500 gms at birth, since it is in these that an increased incidence of handicap might be noted. This study was done in a special clinic in our children's out-patient department. At 18 months a complete neurological examination and screening inventory were performed. At age 3 an educational and clinical psychologist evaluated the children with various procedures including the Stanford-Binet and WISC (Wechsler Intelligence Scale for Children). A further battery of tests, including evaluation for coordination, were obtained at age 8. From 1966-1970, 197 babies who weighed < 1500 gms at birth were followed. There were 109 neonatal survivors, with 88 neonatal deaths. Survival by birth weight: 500-700 gms - 5%; 750-1000 gms - 32%; 1000-1250 gms - 62%; 1250-1500 gms - 75%. No difference was observed between inborn (54%) and outborn (57%) survival rates from 1966-1970. Presently the inborn survival is much higher, and our outborn rate is only slightly improved. Of the 109 neonatal survivors 98 are long term survivors, 11 post-neonatal deaths occurring in babies who had done well to 28 days. Of the 98, only 3 have been lost to followup. The median birth weight was 1280 gms (766 - 1500 gms), median gestational age 30 weeks (26-40 weeks). The primary obstetric problems producing the LBW infants were recurrent maternal bleeding during pregnancy, and hypertension. Neonatal problems included 40 who were intubated at birth, 20 with weights below the 10th percentile, 30 in whom Hyaline Membrane Disease developed, 54 with recurrent apneic attacks requiring stimulation or intubation to sustain breathing, 30 who developed jaundice (bilirubin > 10 mg%), and 58 with hypoglycemia (blood sugar < 25 mg%). The mean time to regain birth weight was 19 days.

By 18 months all major handicaps (those which would interfere with normal function in society) had been detected. At a mean age of 5 years 2 months (2 years 10 months - 7 years 10 months), 86 (90.5%) were normal; 4 had physical handicaps (spastic hemiplegia) but were of normal intelligence; 5 had major handicaps (3 with low IQ, 2 with neurologic problems). In the infants with major handicaps, a highly significant correlation existed between documented evidence suggestive of severe hypoxia and subsequent handicaps.

Presently a total of 160 babies < 1500 gms at birth, greater than 18 months old, have been evaluated. While the survival rate has continued to increase, the rate of handicap has remained unchanged (9%). Concern has also been expressed for the baby weighing < 1000 gms at birth. From 1966-1973, the major handicap rate for this group was about 11%. Therefore, the same intensive treatment efforts as for larger infants seems justified. Of the infants who developed Hyaline Membrane Disease and required ventilation (those born since 1970), 64 survivors have been studied with a major handicap rate of 6%. Of 29 severely affected Rh sensitized infants (1/3 having hydrops) followed since 1970, all are normal.

As far as can be determined perinatal and neonatal intensive care is associated not just with increased survival, but with a low incidence of major mental and physical handicaps. These results should certainly encourage the Obstetrician to make a major thrust directed toward the vigorous management of the anticipated low birth weight infant. His efforts will not go unrewarded, since the choice is often not between life and death, but between normal life and life with a major handicap.



Big Balanced Rock, Chiricahua Mountains, Arizona (approx 1,000 tons)

- Found useful in the management of vertigo* associated with diseases affecting the vestibular system.
- Can relieve nausea and vomiting often associated with vertigo.*
- Usual adult dosage for Antivert/25 for vertigo:* one tablet t.i.d.
- Also available as Antivert (meclizine HCl) 12.5 mg. scored tablets, for dosage convenience and flexibility.
- Antivert/25 (meclizine HCl) 25 mg. *Chewable* Tablets for nausea, vomiting and dizziness associated with motion sickness.

BRIEF SUMMARY OF PRESCRIBING INFORMATION

*INDICATIONS. Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

Effective: Management of nausea and vomiting and dizziness associated with motion sickness.

Possibly Effective: Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

The administration of meclizine to pregnant rats during the 12-15 day of gestation has produced cleft palate in the offspring. Limited studies using doses of over 100 mg./kg./day in rabbits and 10 mg./kg./day in pigs and monkeys did not show cleft palate. Congeners of meclizine have caused cleft palate in species other than the rat.

Meclizine HCl is contraindicated in individuals who have shown a previous hypersensitivity to it.

WARNINGS. Since drowsiness may, on occasion, occur with use of this drug, patients should be warned of this possibility and cautioned against driving a car or operating dangerous machinery.

Usage in Children: Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

Usage in Pregnancy: See "Contraindications."

ADVERSE REACTIONS. Drowsiness, dry mouth and, on rare occasions, blurred vision have been reported.

More detailed professional information available on request.

ROERIG Pfizer
A division of Pfizer Pharmaceuticals
New York, New York 10017

Antivert®/25
(meclizine HCl) 25 mg. Tablets
for vertigo*

Effectiveness across the spectrum of most common forms of insomnia

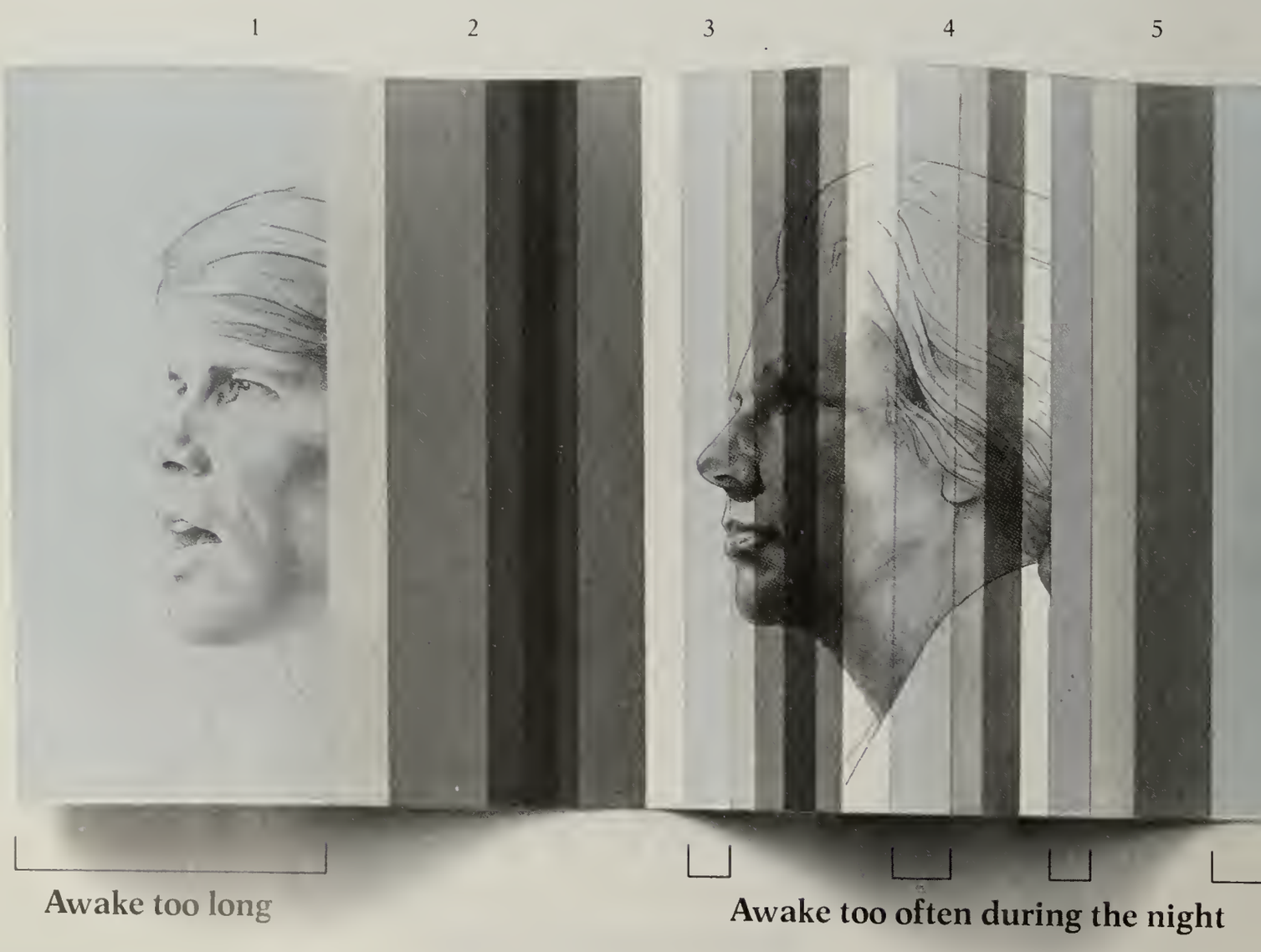
Awake too long, awake too often, awake too early...

These are the most common forms of insomnia, and may occur singly or in any combination. The night of troubled sleep depicted here comprises all three types. As the night progresses from left to right, each sleep stage is identifiable by its own shade of gray. Blue represents "Awake."

As you can see, this hypothetical "patient" takes well over an hour to fall asleep, awakens several times during the middle of the night and awakens too early in the morning.

Sleep Stages

- Awake
- REM
- Stage 1
- Stage 2
- Stage 3
- Stage 4



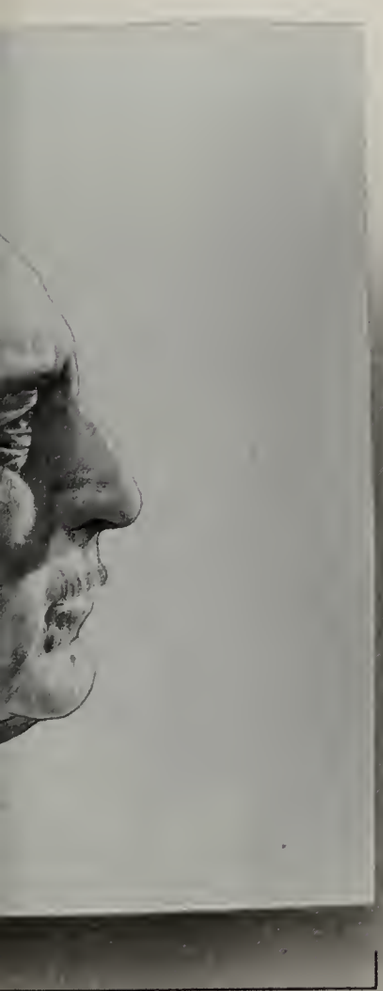
The insomnias most often occurring in young and older adults

For patients with trouble falling asleep (common in young adult insomnia patients), Dalmane (flurazepam HCl) 30 mg provides sleep within 17 minutes, on average. For those with trouble staying asleep or sleeping long enough (common in those over 50), Dalmane offers increased total sleep time with fewer nocturnal awakenings. These clinical results were demonstrated in studies conducted in four geographically separated sleep research laboratories[1-4]

The relative safety of Dalmane (flurazepam HCl) is well documented

Dalmane (flurazepam HCl) is relatively safe and well tolerated; morning "hang-over" has been infrequent. The usual adult dosage is 30 mg; in elderly or debilitated patients, limit initial dosage to 15 mg to preclude over-sedation, dizziness or ataxia. Caution patients about possible combined effects with alcohol and other CNS depressants.

Broad-spectrum medication for the most common forms of insomnia



Awake too early



Dalmane®
(flurazepam HCl)

One 30-mg capsule *h.s.*— usual adult dosage
(15 mg may suffice in some patients).
One 15-mg capsule *h.s.*— initial dosage for elderly or debilitated patients.

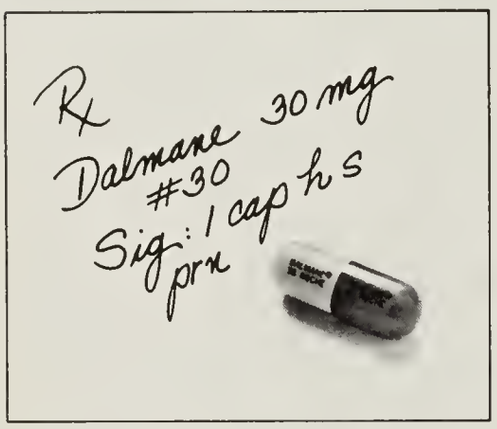
- induces sleep rapidly
- reduces nighttime awakenings
- lengthens total sleep time

ROCHE

Please see following page for a summary of complete product information.

Broad-spectrum medication for the most common forms of insomnia

Dalmane®
(flurazepam HCl) ℞ IV



Objectively proved in the sleep research laboratory, Dalmane

- induces sleep within 17 minutes, on average
- reduces nighttime awakenings
- provides 7 to 8 hours sleep, on average, without repeating dosage

Before prescribing Dalmane (flurazepam HCl), please consult complete product information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

Contraindications: Known hypersensitivity to flurazepam HCl.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity, have also been reported in rare instances.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

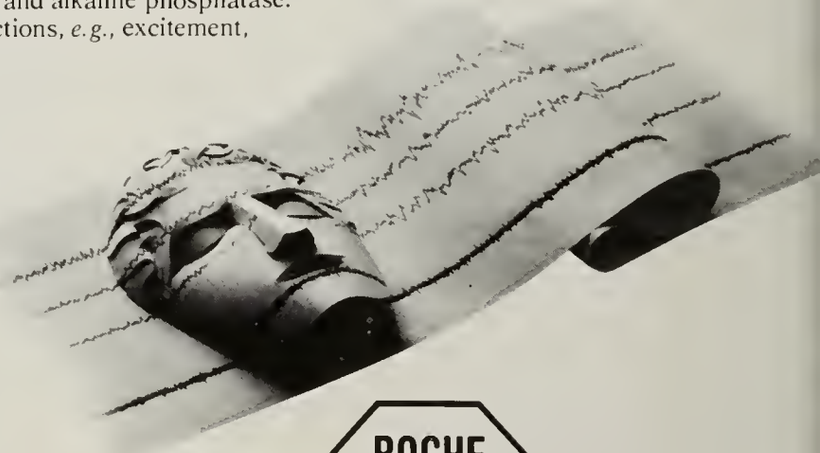
REFERENCES:

1. Karacan I, Williams RL, Smith JR: The sleep laboratory in the investigation of sleep and sleep disturbances. Scientific exhibit at the 124th annual meeting of the American Psychiatric Association, Washington DC, May 3-7, 1971

2. Frost JD Jr: A system for automatically analyzing sleep. Scientific exhibit at the 24th Clinical Convention of the American Medical Association, Boston, Nov 29-Dec 2, 1970; and at the 42nd annual scientific meeting of the Aerospace Medical Association, Houston, Apr 26-29, 1971

3. Vogel GW: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ

4. Dement WC: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ



ROCHE

ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

Clinical Oncology In Arizona

RADIONUCLIDES IN ONCOLOGY

STEPHEN E. JONES, M.D.

Editors: Sydney E. Salmon, M.D., Professor and Head, Section of Hematology and Oncology, University of Arizona College of Medicine, Tucson, Arizona 85724; Robert H. Thoeny, M.D., Dir., Radiation Oncology, Good Samaritan Hospital, Phoenix, Arizona 85006; Darwin W. Neubauer, M.D., General Surgeon, 720 Country Club Road, Tucson, 85716.

Radionuclides already have a major role in the daily practice of oncology and will, undoubtedly, be of even greater importance in the future. The variety of current and potential applications is shown in Table 1. Their major use at this time is, in the broadest sense, for "tumor scanning," which includes the evaluation of specific organs for the presence of tumor (usually with different radiopharmaceuticals for each organ) and the entire body (generalized tumor searches with radiopharmaceuticals like Gallium 67 citrate or Indium-111-labeled bleomycin). The clinician uses these agents in the initial evaluation of extent of tumor (staging) and in the subsequent management of the patient with cancer to assess response to treatment, to reveal early relapse, and to assist in making decisions concerning treatment. The other potential roles for radionuclides are also briefly considered in this review.

TUMOR SCANNING AGENTS

As proposed by Lilien,[1] radionuclides may be classified as belonging to one of three general categories of tumor scanning agents, depending upon whether there is specific uptake by tumor and whether use is limited to one organ.

From: Section of Hematology-Oncology, Department of Medicine University of Arizona College of Medicine, Tucson, Arizona 85724 (Dr. Jones).

Table 1
Current and Potential Uses of Radionuclides in Oncology

- "Tumor-scanning" agents
 - —for staging
 - —for assessing response
- Therapeutic agents
 - —labeled antibodies
 - —labeled drugs
 - —components of combined modality treatment
- Predictors of drug efficacy

Most of the commonly used radiopharmaceuticals are in the first category, *"nonspecific, limited use"* agents (e.g., agents for bone, brain, or liver-spleen scanning). With all of these agents, because of their lack of specificity for defining tumor in a particular organ, abnormalities on scan represent alteration or displacement of normal tissue. Hence, space-occupying lesions may be due to non-malignant processes (e.g., abscess or cyst) or tumor, and other measures (such as liver biopsy, sonography, or arteriography) may be necessary to accurately define the etiology of the abnormality detected by scan. Additionally, because the radiopharmaceuticals in this category generally can each be used for only one specific organ, individual studies with other radiopharmaceuticals on different days are often necessary to evaluate potential involvement of multiple organs.

The second category, *"specific, limited use"* radiopharmaceuticals, includes agents which are relatively specific for a particular organ or type of tissue, but which because of some special property of the tumor permit discrimination between tumor and normal tissue with external imaging. Examples of this type of radiopharmaceutical would include Iodine 131 for some thyroid cancers, ^{131}I-19-iodocholesterol for functioning adrenal tumors,[2] and radiolabeled antibodies to tumor-associated antigens.[3] It is obvious that the use of radiopharmaceuticals in this category is still quite limited; however, their potential use, particularly employing radiolabeled antibodies, is great.

Extensive effort has been directed toward the development of the third category of radiopharmaceuticals, *"specific, general use"* agents, which ideally would be taken up specifically by tumor (and not normal tissue) and which could be used for a broad spectrum of tumor types. The characteristics of an "ideal" general use tumor imaging agent are described in Table 2. Although an ideal agent does not yet exist, two radiophar-

maceuticals in this category have undergone extensive clinical evaluation: In-^{111}-bleomycin[4] and Gallium 67.[5] Both of these agents have been used to image a wide variety of human tumors; however, neither is entirely tumor-specific and the occurrence of "false-positive" and "false-negative" uptake can be a significant limitation at times.

All of these three types of tumor scanning agents are used in two clinical settings: staging and follow-up of the patient with cancer.

It has become increasingly more important to the oncologist in choosing appropriate therapy for a particular patient to have accurate knowledge of the extent or degree of spread (stage) of tumor. "Staging" is critical in treatment planning both for the radiation therapist and for the medical oncologist. Inadequate staging can result in less than optimum treatment or excessive local treatment when the disease is more disseminated than is apparent from physical examination or routine laboratory and x-ray studies. The need to define extent of tumor prior to treatment has led to many new technical advances (e.g., improved endoscopic equipment, computerized tomography), laboratory tests (e.g., assays for carcinoembryonic antigen or other tumor markers), and radiographic procedures (e.g., whole-lung tomography, lymphangiography). In certain settings, the need for accurate information is so great that additional surgical procedures are often used: bone marrow core and liver biopsy in patients with non-Hodgkin's lymphomas, exploratory laparotomy with splenectomy in patients with Hodgkin's disease, and laparoscopy in patients with ovarian cancer. The information obtained from these procedures has clearly influenced the choice, and consequently the results, of therapy and has led to improved survival for many patients. However, many of these procedures have inherent limitations including expense and associated morbidity which would preclude use in certain patients or preclude frequent repetition during follow-up. Although less specific, nuclear diagnostic procedures are, in contrast, easily performed, associated with much lower morbidity and high sensitivity, and they can be repeated safely as often as necessary.

The major drawback to the currently available scanning procedures remains their lack of specificity. For example, large filling defects on liver scan in patients with known cancer, particularly those with a propensity for spread to the liver, are generally associated with metastatic deposits in that organ. On the other hand, a normal scan appearance, mild to moderate hepatomegaly or non-uniform (patchy) uptake of radioactivity in the liver may be due to metastatic cancer or, more commonly, represent non-neoplastic conditions for the various patterns. If treatment decisions will be based on whether or not there is metastatic spread of tumor to the liver, then more direct and more reliable confirmatory procedures of liver involvement are required (e.g., percutaneous needle biopsy, laparoscopy with liver biopsy, or even laparotomy with open biopsy). However, once the particular pattern is established as representing metastatic disease, serial (non-invasive) liver scanning is an easy means of following the extent of liver involvement.

These same general considerations apply to the use of bone scanning. Scans are a sensitive initial screen for bony metastases and frequently will detect neoplastic involvement of the skeletal system in 30% - 50% of patients with normal radiographic studies of the same region.[6] False negative scans are uncommon. However, abnormalities on scan may be non-specific (not due to cancer) in 3% - 10% of studies and specific x-ray views of the abnormal regions on scan must be obtained to exclude benign causes for the abnormalities observed (e.g., arthritis, old trauma, congenital abnormalities, etc.). In patients with metastatic disease to the skeleton, serial bone scanning is an easy and reliable means of detecting progression of disease or assessing response to chemotherapy.

Bone scans should also be performed pre-operatively in patients with clinical or mammographic findings suggestive of breast cancer. When bone scanning is used in this manner, metastases to the skeleton are detected in about 10% of cases, (higher) in patients with axillary lymph node involvement.[7] Because adjuvant chemotherapy after mastectomy is producing impressive reductions in the number of subsequent relapses,[8] it is important to attempt to distinguish those patients with localized breast cancer from those who already have widely disseminated disease. If a scan has not been performed pre-operatively it should be done as soon after mastectomy as is feasible. (Unfortunately, more non-specific chest wall abnormalities are detected in the area of the mastectomy when scans are done post-operatively.)

Brain scans are indicated in patients who have developed neurologic symptoms or signs, and probably in patients with tumors with a known propensity for spread to the CNS. For example, brain metastases develop in as many as 40% of patients with oat cell carcinoma of the lung; indeed, "prophylactic" whole-brain irradiation is included in many current programs for the treatment of this tumor. Patients with histiocytic lymphoma, leukemia, melanoma, and breast cancer also may first relapse in the CNS, which is a "drug sanctuary" (most cancer chemotherapeutic agents do not cross the blood-brain barrier). Ten percent of our patients with breast cancer who are responding in peripheral sites (e.g., lungs, skin, nodes, bone) to combination chemotherapy have CNS manifestations as the first sign of relapse. Early detection of brain metastases or leptomeningeal tumor is important so that neurologic deficits may be minimized with prompt and appropriate treatment. Computed tomography, a recent major advance in the early detection of CNS lesions, may eventually supplant some of the uses of brain scanning.

The role one attributes to the general use of tumor scans such as Gallium 67 or In-^{111}-bleomycin in the management of patients with cancer depends on whether there are better means of staging, follow-up or assessment of response. In patients with abdominal cancers, we often do not have adequate methods of evaluation and have relied heavily on the use of these scans coupled with abdominal sonography. Often when we are asked to see these patients postoperatively, the bulk of the tumor has been removed but there is residual disease in the abdomen. Physical examination may be difficult or the findings uncertain and we are confronted with having to plan treatment without any easy means of assessing the extent of residual tumor. Seventy to ninety percent of these tumors (e.g., pancreas, colon, ovary, cervix) take up In-^{111}-bleomycin and this agent appears to be superior to Gallium 67 in this group of neoplasms[4] (probably because there is much less problem with gastrointestinal tract accumulation with In-^{111}-bleomycin than with Gallium 67 which is primarily excreted by the intestine). Conversely, in patients with lymphoma, where standard diagnostic procedures are highly reliable for detecting residual disease (e.g., careful physical examination, lymphography, bone marrow core biopsy, etc.) and where information derived from these general purpose scans is less reliable than standard clinical parameters, we do not recommend making treatment decisions based only on the findings from scanning.

Another limitation of these agents at this time is their nonspecific uptake in normal tissues (e.g., liver, bone marrow, kidneys, gut), particularly in patients who are thought to be free of disease by clinical criteria. For example, in 21 patients with lymphoma in remission, only eight scans with In-^{111}-bleomycin were completely normal; 13 were judged to be falsely positive.[9] Similar findings have been observed with Gallium 67. However, it is in this group of patients who are apparently in remission that we most want accurate information from scanning about occult, active disease and it is in this group that these general use tumor scans are currently the least reliable. It is hoped that better imaging equipment and new tumor-seeking agents (e.g., ones with characteristics which approach those of the "ideal" agent (Table 2) will improve the reliability of these agents in this clinical setting.

Table 2

Characteristics of an Ideal Tumor Imaging Agent

—Inexpensive (can be repeated as often as needed)
—Safe (for personnel and patients)
—Highly specific (taken up exclusively by tumor and not normal tissues)
—Widely useful (taken up by many or most types of tumor)
—Readily and easily imaged
—Highly sensitive (can detect small metastatic foci
—Reliable (negligible false positive and false negative rates)

RADIONUCLIDES AS THERAPEUTIC AGENTS

Radionuclides may have therapeutic use as one component of combined modality therapy for cancer. For example, in Tucson a combined therapeutic modality approach has been developed for patients with thyroid cancer who are at high risk for local or distant recurrence after conventional treatment. As reported by Durie et al[10] ten of forty patients with thyroid cancer to date were considered eligible for this program which consists of total thyroidectomy with neck dissection (if there are positive lymph nodes) followed by I 131 and repetitive courses of combination chemotherapy employing the drugs known to have activity in thyroid cancer (adriamycin, bleomycin, vincristine, and melphalan).

The combined used of I 131 and chemotherapy is based on the premise that different mechanisms of tumor cell kill might be exploited. Well-differentiated residual thyroid cancer cells are more likely to take up and be destroyed by I 131, whereas more undifferentiated or anaplastic cells might be eliminated with chemotherapy. Although the results of this pilot program are quite preliminary, the data suggest that this combined approach will be of value for patients with high-risk thyroid cancer.

The radiolabeling of drugs (particularly tumor-seeking drugs like bleomycin) or antibodies (such as antibodies against tumor-associated antigens) is also a potential means of delivering lethal irradiation directly to the cancer cell and may become a practical form of therapy in the future.

RADIONUCLIDES IN THE PREDICTION OF RESPONSE TO ANTICANCER DRUGS

Another potential and special role for certain types of radiopharmaceuticals is in predicting tumor responsiveness to a particular drug. Iodine 131 is currently the only radiopharmaceutical in use which does predict response to therapeutic doses of the agent in certain cases of metastatic thyroid cancer. Despite the fact that bleomycin is a useful anticancer drug, we found that In-^{111}-labeled bleomycin did not predict response to subsequent therapeutic doses of bleomycin.[11] The potential diagnostic and even therapeutic use of other labeled drugs (e.g., I-^{131}-bleomycin, labeled adriamycin, etc.) is great and further advances in this area can be anticipated.

REFERENCES

1. Lilien, D.L.: The current status of tumor imaging. J.A.M.A. 230: 735, 1974.
2. Hogan, M.J. et al: Location of aldosterone-producing adenomas with ^{131} I-19-iodocholesterol. New Eng. J. Med. 294:410-414, 1976.
3. Order, S.E., et al: Radionuclide immunoglobulin lymphangiography: A case report. Cancer 35:1487, 1975.
4. Lilien, D.L., et al: A clinical evaluation of indium-111 bleomycin as a tumor-imaging agent. Cancer 35:1036, 1975.
5. Andrews, G.A., and Edwards, C.L.: Tumor scanning with gallium 67. J.A.M.A. 233:1100, 1975.
6. O'Mara, R.E.: Bone scanning in osseous metastatic disease. J.A.M.A. 229:1915, 1974.
7. Charkes, N.D., et al: Preoperative bone scans. Use in women with early breast cancer. J.A.M.A. 233:516, 1975.
8. Bonadonna, G., et al: Combination chemotherapy as an adjuvant treatment in operable breast cancer. New Eng. J. Med. 294:405-410, 1976.
9. Jones, S.E., et al.: Indium-111 bleomycin tumor scanning in lymphoma. Med. Ped. Onc. 1:11, 1975.
10. Durie, B.G.M., et al: Multimodality treatment for high risk thyroid carcinoma. Proc. Am. Assoc. Cancer Res. (in press), 1976.
11. Jones, S.E., et al: Failure of indium-111-labeled bleomycin tumor scanning to predict response to bleomycin (NSC-125066) treatment. Cancer Chemother. Rep. 58:733, 1974.

LETTERS

LABORATORY VS CLINICAL INVESTIGATION OF CANCER

Dear Editor:

An article on CANCER QUACKERY by Paul H. Duffey, M.D., that appeared in the September 1975 issue of *Arizona Medicine* has come to my attention. We are appalled at the generalities utilized by Dr. Duffey in grouping specific anticancer agents that have been *scientifically developed* under the "peak of the art of cancer quackery!" There are at least three of the substances listed on page 725 that are unjustly and incorrectly labeled. I refer to *chapparal tea*, *clam extract* and *Coley's mixed toxins*. Since my research in developmental chemotherapy includes clam extracts, I will address myself to clam material.

In addition to personal publications that include reports at International Cancer Congresses, there are at least nineteen independent scientific papers supporting the *fact* for the existence of an anticancer agent in *Mercenaria* clams. I attach a list of confirmations for your review. Medical scientists from the NIH (9 papers), a Nobel Prize winner and others are represented on this list. All research has been confined to laboratory animals and to human cancer cells in tissue culture. We do not prescribe or recommend clams in lieu of the usual therapies in the medical field. Does this merit the label of "Cancer Quackery?"

Dr. Duffey's article does a disservice to all medical scientists by failing to support his claims with fact. He fails to serve the public as well as professional personnel. His claims can be as disastrous as the very evil he hopes to expose.

Due to the seriousness of Dr. Duffey's allegations, I ask that he make a public retraction. However, if he thinks he can produce scientific data to support his claims, I will await his reply as well as documentation of such evidence.

Sincerely yours,

Arline C. Schmeer, O.P., Ph.D.
Director, Research on Anticancer
Agents of Marine Origin
American Medical Center at Denver
Spivak, Colorado 80214

Dear Editor:

In answer to Dr. Arline Schmeer's letter, I would like to publicly retract any implication that quackery is involved in scientific experimentation with clam extracts as a possible cure for cancer.

The similarity between quack remedies and unproven remedies is that there is no scientifically acceptable evidence that either works in the treatment of human cancer. The difference between quack and unproven remedies is that the former are promoted publicly as cures, while the latter can be the subject of legitimate scientific research.

In animal test systems, clam extract has been shown to be effective in cancer-sarcoma 180 in mice,[1] hamsters inoculated with tumor-inducing adenovirus type 12,[2] Krebs 2 tumors in mice,[3,4] and animals inoculated with Maloney virus leukemic spleen. [5] For L1210 leukemia in mice there have been both positive and negative reports of effectiveness.

However, it has also been inactive against a number of animal cancers and showed only a hint of effectiveness in 5 out of 36 extracts against mouse lymphocytic leukemia P388.[6] The latter two tumors are the animal screening models that have best predicted subsequent effectiveness of experimental drugs derived from natural products in human cancer patients.

To the best of my knowledge, there is no published scientific evidence demonstrating effectiveness of clam extract in human beings with cancer.

It is possible that Dr. Schmeer will be able to overcome the many obstacles to a clinical trial of clam extract in human cancer patients.

If Dr. Schmeer and her associates are successful in proving in a scientifically acceptable manner that clam extract can cure cancer in human beings, we will all be happy. Until that time, clam extract remains, in my opinion, an unproven remedy for human cancer.

Paul H. Duffey, M.D., FACP

BIBLIOGRAPHY

1. Saturday Review, June 1, 1968.
2. Li, C.P., et al, Antiviral Activity of Paolins from Clams. Ann. N.Y. Acd. Sci. 130:347-382, 1965.
3. Hegyeli, A., Temperature Dependence of the Activity of the Anti-Tumor Factor in the Common Clam. Science, vol. 146, pp 77-78, 1964.
4. Schmeer, A.C., Mercenene: An Antineoplastic Agent Extracted from the Marine Clam Mercenaria mercenaria. National Cancer Institute Monograph 31:581-591, 1969.
5. Judge, J.R., Inhibition of Effects of Leukemogenic Viruses in Mice by Extracts of Mercenaria mercenaria. Proceedings of the Society for Experimental Biology and Medicine, vol. 123, pp 299-302, 1966.
6. Unpublished data, Geran, R.I., National Cancer Institute 8/27/73 quoted in letter by Dr. Seymour Perry, Associate Director for Program, National Cancer Institute.

Seminars in Chest Medicine

SURGERY AND THE PATIENT WITH LUNG DISEASE

II. Prevention of postoperative pulmonary complications.

ROBERT J. CLARK, M.D.

This continuing series of articles entitled "Seminars in Chest medicine" will attempt to keep the reader abreast of developments in the broad field of pulmonary diseases. The format used will be that of brief succinct reviews written by the editors as well as guest contributors. Areas of controversy as well as practical chest medicine will be explored. We hope that these reviews will be of value in promoting continuing education for certification examinations as well as a forum for new and controversial issues. The editors welcome comments and discussion from our readers.

ROBERT J. CLARK, M.D.
LYNN M. TAUSSIG, M.D.
WILLIAM C. WEESE, M.D.

A great number of persons undergo some type of major surgical procedure yearly in Arizona. Respiratory failure ($P_aO_2 <$ 60mmHg while breathing room air, $P_aCO_2 >$ 45mmHg), atelectasis, pneumonia, hypoexmia, and other pulmonary complieations ean oecur in the postoperative patient. In fact, if one uses the (A-a) DO_2 (alveolar-arterial differenee in pO_2) while breathing 100 percent oxygen, almost all postoperative patients suffer from a degree of respiratory embarrassment. The loeation and type of surgery performed are well correlated with the

risk of complications; they are more frequent in thoracic and upper abdominal surgery. Various types of therapy such as intermittent positive pressure breathing (IPPB), blow bottles, chest physiotherapy, deep breathing, incentive spirometry, ultrasonic nebulizer, and other means have been suggested to treat and prevent these problems.

Preoperative considerations:

The best way to prevent postoperative problems is to anticipate them preoperatively. Smoking should be stopped as soon as surgery is contemplated. Pulmonary infections must be diagnosed accurately and treated vigorously with antibiotic selection dictated by sputum culture and gram stain. Secretions can be controlled with proper humidification and chest physiotherapy. Asthmatics, especially those who have recently received corticosteroid therapy, require frquent assessment of their status including the effectiveness of bronchodilator therapy. Corticosteroids should be strongly considered in a symptomatic asthmatic or an asthmatic with a history of recent steroid therapy who will soon undergo surgery.

Postoperative considerations

In the immediate postoperative period dramatic changes have occurred in the respiratory tract. The vital capacity is decreased, ciliary function is compromised, the cough reflex is diminished, and fear of pain is present. A host of methods both voluntary and involuntary have been devised to reduce the frequency and magnitude of pulmonary postoperative atelectasis. IPPB is one of the most widely used therapeutic modalities. The rationale behind its use is that the positive pressure will expand the lung to large volumes and prevent or reverse atelectasis. IPPB must be administered by an experienced therapist who will monitor the effectiveness of therapy and assure that the tidal volume is indeed greater than that achieved spontaneously. It is useful to deliver aerosol and hyperventilation therapy. Frequently overlooked are the disadvantages of IPPB therapy which include possibly no change in tidal volume unless the patient is coaxed, interference with cardiac venous return, gastric distension, and risk of infection or cross contamination from colonized equipment. For effective use the tidal volume must be monitored with each breath to assure that it is greater than that which the patient can inspire voluntarily. In practice, however, this is rarely done and the physician, assuming it is effective, fails to use other modalities.

Voluntary deep breathing is perhaps the least expensive mode of therapy and can be quite effective when inspiration is slow and the breath is held temporarily at peak inspiration. No apparatus is needed and the intrapleural pressures are physiologic. Unfortunately, the patient has to be well motivated and highly cooperative.

The incentive spirometer is a variation of the voluntary deep breathing technique wherein the patient is given an indication of his effort as a "reward". Several models are available. Two popular examples are the Bartlett-Edwards incentive spirometer (McGaw) and Uniflo and Triflo (Clinical Products) balltype incentive spirometers. The ball type incentive spirometers are no less effective than the Bartlett-Edwards type and are five to six times less expensive. In addition, the patient is able to take a fully functional unit home for continued use. The emphasis is appropriately on inspiration. Again, cooperation and motivation are required.

Blow bottles, once quite popular, are seldom used today. Their most beneficial effect is in taking the deep breath required to displace the fluid from one container to another. The intraalveolar pressure is theoretically evenly distributed throughout the lung. Unfortunately, the technique emphasizes expiration and it is possible that, if the patient expires below his functional residual capacity (FRC), he could cause more atelectasis than he originally had. This technique is not recommended for routine use.

The above mentioned methods are voluntary and can be supplemented with various involuntary therapeutic modalities. Carbon dioxide rebreathing into a one-liter dead space will cause the patient to increase his minute ventilation. It is inexpensive, simple, and can be done with a minimum of cooperation. Unfortunately, hypercapnea and hypoxemia may result. The hypoxemia can be treated by enriching the mixture with oxygen. The patient may simply increase his rate of respiration and not depth, especially if pain is involved with deep inspiration, thus yielding the treatment ineffective.

Chest physiotherapy and postural drainage can be utilized effectively to mobilize secretions and promote coughing. It involves a great deal of therapist time and can be done only intermittently throughout the day. It is often quite

fatiguing and can be painful to many patients, especially those who have had thoracic surgery. An experienced therapist is required for effective delivery of this therapy. One of the advantages seems to be that of stimulating the patient and thereby encouraging him to cough and deep breathe.

Ultrasonic nebulization of water or normal saline can be very irritating to the larynx and upper airway and cause bronchospasm. Hypertonic saline can also be used. The value of this therapy depends upon the effectiveness of the cough reflex, which, if absent, will be less valuable except for hydrating secretions, thereby facilitating their removal. The involuntary coughing hopefully would cause an involuntary deep inspiration prior to the tussive effort. It is simple to use. The machines are expensive and require regular scrupulous cleaning to prevent contamination of patients. Tachyphylaxis to the mist may occur.

Nasotracheal suction is frequently used and in certain instances is quite helpful. The secretions within the trachea and mainstem bronchi can be removed and it stimulates the cough reflex. It is uncomfortable and requires skill in executing. Sometimes, it is very difficult to introduce a catheter into the trachea. Cardiac arrhythmias, hypoxia, tracheal damage, bronchospasm, or laryngospasm can occur.

Therapeutic bronchoscopy is an invaluable tool in the maintenance of airway patency and can be used in patients with a segmental lobar or total lung collapse. It rapidly aids the patient in relieving obstructive secretions. It is, however, expensive and not without some risks, such as cardiac arrhythmias, hypoxia, and anesthetic reaction. It must be performed by a physician experienced in the technique of bronchoscopy and is helpful only in conjunction with other therapeutic modalities.

Percutaneous tracheal catheters are infrequently used to instill a solution to stimulate the cough reflex. The technique presupposes the presence of a cough reflex and is ineffective if none exists. Subcutaneous emphysema, hemorrhage and infection can occur and the catheter may rarely break off. In selected instances it is of value.

The value of temporary postoperative mechanical ventilation is frequently overlooked. Its use should be considered in patients with severe lung disease who are seriously ill and will undergo high abdominal or thoracic surgery. The 24 to 48 hour period immediately following surgery is usually the most critical regarding suppression of the cough reflex, decrease of vital capacity and inability to clear secretions. Postoperative mechanical ventilation or leaving the endotracheal tube in place for one or two days can help avoid situations which may lead to pulmonary complications. Sedation also dulls the cough reflex making the removal of secretions more difficult.

In summary, the method used should best fit the clinical situation. If one therapeutic mode fails, another may be tried in its place. Close monitoring especially of the tidal volume is necessary. The frequency of delivery will depend on the availability of manpower and the willingness of the patient to accept it. An ideal maneuver would be one which is inexpensive, fits the needs of most patients, is easy to administer (preferably by the patient himself) and can be performed frequently. For most patients an incentive spirometer best fits these criteria provided they are well motivated and understand the procedure. For those patients who are unable to cooperate or refuse to do so, one of the other modalities may be used. The plastic ball disposable incentive spirometer is effective, inexpensive and well accepted by patients.

REFERENCES

1. Weese, W.C., Surgery and The Patient With Lung Disease—I Preoperative Appraisal and Preparation Ariz. Med.- 33:110 (1976).
2. Gold, M.I., The Present Status of IPPB Therapy Chest — 67: 469 (1975).
3. Murray, J.F., Review of The State of The Art In Intermittent Positive Pressure Breathing Therapy Am. Rev. Resp. Dis. - 107: 193 (1975).
4. Bartlett, R.H., et al, Respiratory Maneuvers To Prevent Postoperative Pulmonary Complications JAMA - 224: 1017 (1973).
5. Parsons, E.F., et al, Effect of Positive Pressure Breathing On Distribution of Pulmonary Blood Flow and Ventilation Am. Rev. Resp. Dis. - 103: 356 (1971).
6. Van De Waser, J.M., et al, Prevention of Postoperative Pulmonary Complications, Surg., Gyn Obs. - 135:229 (1972).

Seminars in Endocrinology and Metabolism

DIABETIC KETOACIDOSIS: HIGH VERSUS LOW-DOSE INSULIN THERAPY

MARSHALL B. BLOCK, M.D.

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

The unfortunate occurrence of diabetic ketoacidosis bespeaks the difficulties we are continually facing in the treatment of patients with diabetes mellitus. Recently our therapy for diabetic ketoacidosis has undergone re-evaluation. Early enthusiasm for these newer changes in the therapy of diabetic ketoacidosis has provoked additional responses from the more conventional oriented therapists and has created a confusing situation for the clinician testing the patient with this disorder. It is because of this undertainty that a review of the current trends in the treatment of this condition with special reference to insulin therapy is being undertaken.

The underlying pathophysiology of diabetic ketoacidosis is well-known and does not need to be repeated in detail except to say that in the majority of the patients who present with this condition, either absolute or relative deficiency of insulin is present. This is responsible for many of the secondary changes which we see in this condition, i.e., marked hyperglycemia, glycosuria with polyuria and thus dehydration, marked lipolysis and ultimately excessive ketone body formation resulting in acidosis. The hallmark of treatment of this condition in addition to replacement of fluid loss has been insulin. Insulin is usually administered in this condition in large quantities, either solely as intravenous boluses or in conjunction with subcutaneous injections. Standard textbooks of medicine and endocrinology in the 1950's and 1960's as well as more specialized versions from various diabetes centers (i.e. Joslin Clinic) have provided guidelines for the initial dose of insulin to be used. This depended on the level of glycemia and acetonemia. The average initial dose of insulin approximated 100 to 200 units in patients with moderate to severe ketoacidosis. Sequential levels of blood sugar, serum electrolytes (especially potassium) and replenishment of fluids over the ensuring hours guided the doses of supplemental insulin needed in these patients. This approach has stood the test of time for the mortality rate of diabetic ketoacidosis utilizing this approach is approximately five to six percent. Obviously other associated factors influence mortality in addition to the level of hyperglycemia and these include plasma osmolality, renal function and the presenting level of central nervous system dysfunction. Infections and myocardial damage also greatly raise mortality rates irrespective of the level of hyperglycemia present initially.

Taking advantage of our greater understanding of insulin physiology and metabolism newer therapeutic approaches to the treatment of diabetic ketoacidosis has been enthusiastically accepted in many quarters. Insulin if given intravenously has a half-life approximating five to seven minutes and is primarily degraded within the kidney and liver. Furthermore, the marked volume depletion which occurs in patients with diabetic ketoacidosis leads to decreased peripheral vascular flow which in turn limits insulin absorption from subcutaneous as well as intramuscular sites. It was for these reasons that many centers began abandoning the subcutaneous and intramuscular routes of administration for ketoacidosis in favor of the intravenous route. With the later approach rapid rises and declines of insulin levels could be monitored and the erratic nature of subcutaneous absorption of insulin could be thus elimi-

Reprint requests to: 3411 North Fifth Avenue, Phoenix, Arizona 85013.

nated. However, patients so treated need to be closely followed with frequent checks of blood sugar and serum potassium levels. Because of the short insulin half-life and the long turn around time for laboratory analysis of serum specimens it has been difficult to closely monitor glucose levels using intravenous insulin boluses. This resulted in the thought that continuous insulin infusions might obviate these problems. The use of continuous infusions to provide a constant plasma level of insulin would also obviate the high early level of insulin reached after intravenous bolus therapy. With this approach lower and lower doses of insulin have been found to be just as effective as the higher doses in correcting the hyperglycemia and ketogenesis present in this condition. This prompted several studies to be undertaken in order to assess the efficacy of low-dose insulin therapy in the treatment of diabetic ketoacidosis. The patients utilized for these studies included a spectrum with varying degrees of ketosis, acidosis and central nervous system dysfunction. The low-dose insulin therapy utilized either intravenous constant infusions or low-dose intramuscular injections of Regular insulin. Initially a low-dose regimen employed 15 units per hour therapy with a priming injection of 15 units. This ultimately resulted in lower doses being tried. They ranged from 8 units per hour preceded by a priming dose of 8 units to only 2.4 units per hour preceded by a priming dose of 0.5 units. The response of these patients to such therapy appeared good and seemed to follow that with our larger more conventional intermittent doses of insulin both intravenously and subcutaneously. These studies resulted in two editorials which were extremely favorable to the use of low-dose insulin therapy in the treatment of diabetic ketoacidosis and thus fostered further the use of such therapy in this condition.

As mentioned in prior *Seminars*, initial enthusiasm for a new form of therapy is usually followed by criticism and marked side effects resulting in a waning of enthusiasm. Such has recently appeared concerning low-dose insulin therapy for diabetic ketoacidosis.

A recent article in the *Lancet* by Soler, et al, comparing both the conventional high-dose and low-dose insulin therapies for diabetic ketoacidosis found no difference in morbidity or mortality between the two approaches. In fact, the conventional therapy seemed to have certain advantages. Nevertheless, these advantages were not very great and the end conclusion from this important study was that careful monitoring of the patient was the most important variable in determining ultimate outcome. It seemed to bear little relationship to the type of insulin or to the type of insulin regimen used to treat the patient with diabetic ketoacidosis. Recently an editorial by Madison in the *New England Journal of Medicine*, seemed to summarize the feelings of the more conventional diabetologists in this country. His conclusions were that "on the basis of present data, low-dose insulin infusion in the treatment of diabetic ketoacidosis should be considered only a research tool. In no way do these data, however challenging and interesting they may be, justify the wide-spread use of this regimen by practicing physicians. Before general use a larger prospective, randomized study comparing conventional high-dose intravenous insulin regimens with the low-dose continuous infusion technic must be conducted by experienced clinical investigators under conditions clearly designed to protect patients who fail to respond promptly". He concluded by saying, "There is no doubt that many patients with diabetic ketoacidosis will respond to low-dose continuous insulin infusion. It is more pertinent, however, to ask how many will not respond. Put in another way, how many lives will be lost as a consequence of inadequate insulin administration because of the present unwarranted enthusiam for and use of progressively decreasing amounts of insulin in the treatment of diabetic ketoacidosis?"

In conclusion, as usual, ultimately a new plateau will have to be reached concerning the treatment of diabetic ketoacidosis by the above mentioned newer modalities. Nevertheless, I think the practicing physician should continue to utilize the standard treatment regimens for the condition and only under experimental circumstances use the low-dose therapies. I think the suggestions by Madison are cogent and are very similar to those that have been raised concering the oral agents in the treatment of adult-onset diabetes mellitus. It appears to all boil down to risk versus benefit, as it rightly should.

REFERENCES

1. Page, M. Mc. B., Alberti, K. G. M. M., Greenwood R., et al: Treatment of diabetic coma with continuous low-dose infusion of insulin. Br. Med. J., 2:687-690, 1974.
2. Kidson, W., Casey, J., Kraegen, E., et al: Treatment of severe diabetes mellitus by insulin infusion. Br. Med. J., 2:691-694, 1974.
3. Vaisrub, S.: Low-dose intravenous infusion of insulin in diabetic coma. JAMA, 230:1178-1179, 1974.
4. Molnar, G. D., Service, F. J.: Low-dosage continuous insulin infusion for diabetic coma. Ann. Intern. Med., 81:853-854, 1974.
5. Soler, N. G., Wright, A. D., FitzGerald, M. G., et al: Comparative study of different insulin regimens in management of diabetic ketoacidosis. Lancet, 2:1221-1224, 1975.
6. Genuth, S. M.: Constant intravenous insulin infusion in diabetic ketoacidosis. JAMA, 223:1348-1351, 1381-1382, 1973.

VECTOR BORNE DISEASE CONTROL IN ARIZONA



SUZANNE DANDOY, M.D.
ACTING DIRECTOR

Arizona was among several Western states that recorded human cases of two arthropod-borne diseases, bubonic plague and St. Louis encephalitis, during 1975. These diseases, and others transmitted or 'vectred' by arthropods, are the primary concern of the Vector Control Program which has been a part of the Bureau of Sanitation, Division of Environmental Health Services, for the past year and half.

The prevention of these diseases is tied to the biology and management of the vector that transmits them. In Arizona, bubonic plague is circulated in wild rodents, particularly in the northern part of the state. When an infected rodent dies, its fleas seek new hosts which may include humans camping, hiking, or living in wilderness areas.

The Vector Control Program continually monitors wild rodents and fleas via trapping activities throughout the state. Such surveillance and the increased knowledge of the rodent species and their fleas can help predict the possibility of bubonic plague, thereby enabling health professionals to take preventive measures to control the spread to humans.

A physician's report of a human case in Arizona triggers the alert which activates local, state, and federal health agencies. These health agencies and the Vector Control Program then cooperate in procedures designed to contain the outbreak and prevent an epidemic.

The arthropod-borne viral encephalitides occur more seasonally than does bubonic plague. Control activities intensify during the months of peak mosquito activity from midsummer to frost and are aimed at the *Culex tarsalis* species which is the carrier of encephalitis. Both Western Equine Encephalitis and St. Louis Encephalitis, the common arthropod-borne viruses in the state, are believed to be transmitted from wild avian reservoirs to the mosquito to man. Since both of the major arboviral diseases depend upon mosquitoes for transmission, mosquito control is the first principle in prevention of the diseases.

Early diagnosis of encephalitis, followed by submission of suitable samples to the State Laboratory for verification of arbovirus, is often the first indication of a potential outbreak. Again, a quickly reported case can prevent or limit epidemics by alerting county vector units to initiate control measures.

Surveillance techniques now being instituted by the program will enable the Department to determine buildup of virus carrying vectors. This surveillance is accomplished through a cooperative program with county health departments which collect and ship mosquito specimenss to the program entomologist for identification and virological examination. The information obtained from this surveillance improves timing of control techniques.

Modern vector control technology utilizes larval source reduction techniques. Such practices reduce the amount of spraying necessary. Continuing study of vector relationships will provide innovative ways of combating arthropod-borne diseases in Arizona counties.

The program is expanding its study of arthropod-disease relationships to include a study of tick-borne relapsing fever, pediculosis, and scabies mite infestations. The staff of the Vector Control Program, which can be reached at 271-4641, is available to public and private health practitioners as a reference source in matters regarding arthropod/disease relationships.

Radiology
Case of the Month

RADIOLOGY CASE NO. 9

JOHN C. BJELLAND, M.D.
IRWIN M. FREUNDLICH, M.D.



Figure 1



Figure 2

A 57 year old male was admitted to the hospital with a three month history of malaise, non-productive cough, a 30 pound weight loss and recent onset of increasing fatique, right shoulder pain and constant right pleuritic pain. The patient denied chills, fever, night sweats, productive cough and foreign travel.

On physical examination the patient had normal vital signs, appeared chronically ill but was in no acute distress. Heent exam demonstrated very poor oral hygiene. Auscultation and percussion of the patient's chest revealed absent breath sounds and dullness on the right from the inferior angle of the scapula to the level of T-12. A corresponding area of decreased vocal fremitus on the right was palpable as well. The abdominal exam and the remainder of the physical examination were unremarkable.

A CBC drawn at the time of admission showed a normal white blood count with 71 segmented and 8 band forms and the patient was anemic. Liver function tests were normal.

Figure 1 is the patient's admission chest examination. A KUB obtained at the same time was unremarkable with the liver in a normal position. A decubitus chest examination failed to demonstrate the presence of free pleural fluid.

On the fourth hospital day the patient's temeprature spiked to 101°F. and his white count rose to 15,000. He developed a cough productive of copious amounts of green, non-viscous, fetid fluid. The chest examination in Figure 2 was obtained at that time. What is the best diagnosis?

ANAEROBIC THORACIC EMPYEMA COMPLICATED BY BRONCHOPLEURAL FISTULA AND ASPIRATION PNEUMONIA



Figure 3

The important finding in Figure 1 consists of an apparent elevation of the right hemi-diaphragm. The lateral costophrenic angle is preserved and the right upper lobe appears normal. The mediastinum is not shifted and the left hemi-thorax is normal. This roentgenographic appearance is common and the differential diagnosis of a large homogeneous roentgenographic density occupying the lower portion of one hemithorax is a long one. In view of the patient's clinical history, physical exam, and laboratory findings the radiographic differential diagnosis is reduced to 1) lower lobe pneumonia, 2) intra-bronchial neoplasm with peripheral atelectisis and consolidation with or without an infra-pulmonic effusion, 3) atypical, sub-pulmonic effusion or empyema and 4) sub-diaphragmatic abscess. (In the above, "atypical"-- refers to a lack of the usual meniscus formation in the costophrenic angle and the lack of free flow of the pleural fluid on decubitus examination.)

In Figure 2 the arrows point to the interface between a lucent air filled area inferiorly and atelectatic pulmonary parenchyma superiorly. This interface is quite similar to the arch of the *apparent* elevated hemidiaphragm in Figure 1. In addition, there is diffuse pneumonitis due to aspiration of empyema fluid. The radiograph in Figure 3 was obtained after a chest tube had been placed in the lucent area noted in Figure 2. Although drainage of the air and fluid on the right has occurred, the diffuse aspiration pneumonitis has progressed. The right hemidiaphragm in a relatively normal position can be seen in Figure 3, which makes a sub-diaphragmatic abscess quite unlikely.

The etiologic agent cultured from the foul pus was, as might well be expected, an anaerobic gram negative rod, *Bacteroides fragilis*. The pulmonary infection secondary to this agent characteristically develops in the lower lobes. It often develops via aspiration from a focus of primary infection in the oropharynx of patients with poor oral hygiene. Empyema formation is almost invariable and this may obscure the underlying parenchymal disease. Clinically, patients present with little or no fever and do not appear acutely ill, as in this case, until a bronchopleural fistula develops. Expectorated material is foul smelling, the patients often complain of pleuritic pain and, if the diaphragm is irritated, pain is referred to the shoulder.

REFERENCES

1. Fraser and Pare, Diagnosis of Diseases of the Chest W.B. Saunders Co., 1979.
2. Cecil-Loeb, Textbook of Medicine, W.B. Saunders, Co., Thirteenth Edition, 1971.

Editorial

HYSTERIA

WILLIAM B. McGRATH, M.D.

The assassination of Robert Kennedy provoked shudders of revulsion in the television networks and in the movie industry. Their reactions were loudly publicized—and so were their prompt and pious avowals that the portrayal of violence would be curbed in future productions. The promises were not kept. And the public's disillusionment and continuing protest are warranted.

However, the issue of violence may be only a part or symptom of a deeper problem. Television seems to be cultivating hysteria.

By unsophisticated standards a play or program is dramatic only when the action and dialogue are deliberately affected, exaggerated, histrionic. Such terms pratically define the hysterical personality.

On the screen a maiden stumbles over a corpse, and she screams most piercingly, on and on and on until the next commercial. The addict agonizes all over the floor, dripping sweat, sobbing, grinding his teeth, knocking over lamps and tables. The antagonists get into shouting matches with their mouths only inches apart. (This is not even sanitary.) The bar-maid or woman of ill repute (with a heart of gold, of course) swings only her hips and not her shoulders, lest her bra lift her bosom up over her collar bones. The hero-detective bullies everyone with insufferable rudeness and makes a clever quip when the body of the villain is hauled away.

The premise or plot of most situation comedies is based on the protagonist's lying or misrepresenting himself.

Histrionics are essential to theater, or course, but prolonged exposure can dim one's recognition of the fact.

Now may we look at the hysterical personality in real life? He over-reacts to everything. He is self-centered. But because he lacks any sincere sense of self, he always plays to the audience. He manipulates the people around him with no concern for the trouble he causes. He will go to any lengths of deceit to get the attention he craves.

Normal individuals try to avoid the hysteric. They soon learn that the hysteric will not govern himself by ordinary rules of honesty and fair play and restraint. One cannot protect one's self nor win a reasonable argument against the hysteric's habitual personalizings or the crescendo of his emotional fits.

An innocent doctor, new to town, had an office encounter with a woman. Their only physical contact was the simple handshake of introduction. Later she told her bridge group how she was looking forward to being with the doctor again "because he likes to hold my hand." She would blandly deny that she was portraying herself as irresistible and the doctor (instead of herself) as seductive. And she would happily gamble his whole professional reputation her momentary chance for attention.

Note the word, happily. I have never heard a true hysteric express regret or remorse for anyone's hurt except his or her own.

One usually thinks first of the psychopath as not caring about others. There is a significant distinction. To the psychopath an act is usually an end in itself, the immediate gratification of his wish, as in robbery or rape. The hysteric can convince himself that the end will be good for him or morally neutral. Then he will use unbelievably malignant and destructive means to that end—and still be smilingly self-satisfied!

Consider assassins and terrorists. If they have anything in common it is a kind of hysteria. It is a total egocentricity or narcissism by reason of which they will have their own way regardless of the cost to others. Who else could poison a water supply or plant a deadly bomb in an aircraft or hotel?

Now, please, we are not arguing cause and effect. Yet for too many hours we expose ourselves and our children not just to violence but to the more innocent-seeming histrionics of television or the movies. It is easy to say, "In real life people don't act or talk that way." We cannot be so sure of this. Maybe some day we will not know the difference.

NEW MEMBERS OF ARMA
January-February 1976

NAME	Specialty	City
Daniel N.A. Anavy, M.D.	DR	Tucson
Wendell B. Ashby, M.D.	OBG	Tucson
Lenox D. Baker, Jr., M.D.	TS CDS	Phoenix
Gary L. Bonwell, M.D.	AN	Tucson
Charles A. Bryant, IV, M.D.	PD	Tucson
Herbert H. Bunchman, II, M.D.	PS	Mesa
Charlotte A. Burns, M.D.	OPH	Tucson
James M. Byers, III, M.D.	TS CDS	Phoenix
David A. Cherril, M.D.	IM NEP	Scottsdale
Stuart B. Cohen, M.D.	DR	Phoenix
Pacita R. Coss, M.D.	FP PD	Tucson
Carl W. Dasse, M.D.	GP	Tucson
Lee P. Davis, M.D.	IM	Phoenix
John A. Davis, M.D.	OTO	Phoenix
Roger A. Davis, M.D.	IM	Tucson
Daniel C. DeBoer, M.D.	D	Tucson
Bernard Dickstein, M.D.	A	Tucson
Joseph P. Dils, M.D.	R	Phoenix
Stephen E. Dippe, M.D.	END	Scottsdale
Raymond J. Donovan, M.D.	OBG	Phoenix
Lynn S. Farnsworth, M.D.	OBG	Tempe
Theordor Feinstat, M.D.	ER	Flagstaff
Hugh V. Firor, M.D.	PDS	Tucson
Barry E. Gershweir, M.D.	OBG	Tucson
George S. Gieszl, Jr., M.D.	AN	Tempe
Stephen Glouberman, M.D.	GE	Phoenix
Edwin G. Goldstein, M.D.	DR	Phoenix
Joseph R. Gottesman, M.D.	PM	Scottsdale
Ormond D. Grice, M.D.	GS	Tucson
Patrick C. Griffin, M.D.	GP	Scottsdale
Patricia H. Gulbrandsen, M.D.	PM	Phoenix
John R. Harlan, M.D.	IM	Phoenix
James N. Hecker, M.D.	R	Phoenix
Bary A. Henden, M.D.	N	Phoenix
John L. Hennessee, M.D.	GP	Tucson
Cherryl B. Hofstetter, M.D.	IM	Sun City
Gregory Inda, M.D.	IM	Scottsdale
David W. Irwin, M.D.	GS	Navajo
William D. Jacoby, Jr., M.D.	D	Tucson
Donald L. Jeck, M.D.	DR	Tucson
Peter C. Johnson, M.D.	PTH	Tucson
Brian C. Judd, M.D.	AN	Phoenix
Glen R. Kartchner, M.D.	ER	Tucson
David K. King, M.D.	IM	Phoenix
Katherine O. Klein, M.D.	OPH	Tucson
James B. Klein, M.D.	GS	Tucson
Glenn H. Koepke, M.D.	ER	Tucson
John F. Kiempen, M.D.	ORS	Tucson
Jose F. Laguna, M.D.	N	Tucson
Mervyn Laken, M.D.	IM	Paradise Valley
Donald E. Lorentzen, M.D.	IM	Tucson
Paul E. Lundstrom, M.D.	GS	Flagstaff
John H. Mahon, M.D.	ORS	Scottsdale
Carl H. Mangelsdorf, M.D.	FP	Tucson
Richard A. Matthews, M.D.	GP	Phoenix
James H. McDonald, M.D.	U	Phoenix
Lyle B. McDowell, M.D.	GP, ER	Scottsdale
Joseph McGready, M.D.	OPH	Tucson
Greg C. Meyer, M.D.	P	Phoenix
Raymond E. Moldow, M.D.	IM	Tucson
Armando Montero, M.D.	IM	Mesa
Martin D. Mollen, M.D.	IM	Scottsdale
Brian Nadell, M.D.	FP	Winslow
Lawrence G. Oder, M.D.	GS	Tucson
M. Dale Parry, D.O.	GP	Page
Paul B. Patton, M.D.	IM	Sun City
Lynn A. Platt, M.D.	PD	Tucson
Michael A. Platt, M.D.	IM	Tucson
Jack N. Poles, M.D.	IM	Phoenix
Donald E. Pont, M.D.	FP	Mesa
Joseph P. Procaccini, M.D.	FP	Phoenix
Donald D. Preuss, M.D.	AN	Mesa
William H. Ragle, M.D.	IM	Phoenix
William J. Rappoport, M.D.	CD	Phoenix
Albert J. Rizzoli, M.D.	IM	Tucson
Richard F. Romfh, M.D.	GS	Tucson
Louis A. Rosati, M.D.	PATH	Mesa
Peter F. Ryers, M.D.	OPH	Tucson
Charles A. Saffell, M.D.	GP	Mesa
Harry D. Schlosser, M.D.	OPH	Tucson
Phyllis F. Shroff, M.D.	AN	Phoenix
Neil Smithline, M.D.	IM	Tucson
Neil G. Steinhoff, M.D.	TS CDS	Phoenix
Robert S. Taylor, M.D.	AN	Tucson
Glenn G. Tefteller, M.D.	FP	Phoenix
Donald L. Tempkin, M.D.	R	Tucson
James E. Thomasson, M.D.	OBG	Tucson
Wanda W. Torrey, M.D.	IM	Tucson
Francisco R. Valdivia, M.D.	N	Tucson
Louis E. Vega, M.D.	PTH	Phoenix
Amor C. Villareal, M.D.	PD	Phoenix
Bernard J. Voss, M.D.	FP	Lake Havasu City
Paul I Wasserman, M.D.	IM	Scottsdale
Joseph T. Zerella, M.D.	PDS	Phoenix



HISTORY OF TUCSON MEDICAL CENTER

REBA GRUBB

Fifty-one years have passed since the groundwork of what is known as Tucson Medical Center was laid. In 1925, when the property on which the hospital stands was purchased, Tucson was a dusty western cow town with a population of about 25,000 residents. At that time, it would have been impossible to foresee the booming growth of the Tucson area and the subsequent needs for the kind of community hospital TMC has become.

The following is a capsule history written by Reba Grubb, Technical Writer, Education Department.

The Old Pueblo

Life itself is the real historian, thus memories and stories from the past bring into proper perspective the courage, devotion and sometimes the obstinacy of those who pioneered the unique organization that is Tucson Medical Center. The intimate, sad, enjoyable aspects of TMC itself and the growth of the community it serves are the foundations of the drama which has unfolded these many years, therefore, composing TMC's history. Space does not permit more than evidence of the historical records of its growth.

TMC's georgraphical location is steeped in history. The area served by the hospital is one of the oldest settlements in the United States. In 1700 Father Kino founded San Xavier del Bac, and 76 years later the Spanish walled in the small adobe settlement of Tucson which was to also see Mexican and Confederate flags fly over it. Arizona became a separate territory of the United States in 1863 and was admitted as a state in 1912.

TMC is build near old Fort Lowell which was used as a post by Federal troops during the Apache Indian wars in the 19th century. It was over the old Fort Lowell road, in the spring of 1925, that Walter E. Lovejoy took Dr. and Mrs. B. L. Wyatt to view a quarter section of property that was for sale. Dr. Wyatt was a young physician from New England who was interested in establishing a TB Sanitorium and research center in Tucson where for years visitors, many with TB, had been attracted to the warm climate. The tract of land he was considering was a parcel that had been homesteaded by John and Bonnie Schoenen under a patent signed July 16, 1913, by Woodrow Wilson, President of the United States. In February 1915, they sold the land to Alexander Berger, a winter visitor to Tucson, who had acquired the land for $8.00 an acre as a speculation on Tucson's future.

The Desert San

Dr. Wyatt purchased the tract from Mr. Berger for $25.00 an acre. He and two local doctors formed a corporation to build a three story TB Sanatorium. The two doctors soon withdrew and Dr. Wyatt continued the project alone. He had opened four units, which he named for Indian tribes; Pima, Maricopa, Apache and Navajo. Each unit was built around an open court and contained eight patient rooms with individual screened porches. His resources were running low and he invited Mr. and Mrs. Alfred Erickson of New York City to share in the project.

In January 1927, Mr. Erickson supplied funds to build four more similar units of twelve rooms ech and named these courts Papago, Hopi, Moqui and Yavapai. He also funded the Patio Building and the nurses residence. Later the Ericksons assumed responsibility for the entire project and employed Dr. Wyatt as director of the Desert Sanitorium. They then build a residence for themselves and became frequent visitors to Tucson.

In 1929 Dr. Wyatt resigned and Dr. Allen K. Krause from John Hopkins University became president and director of the Desert San. Under his leadership the San became a respiratory and arthritis center with only one building housing TB patients. The fundamental goal of research was pursued for a time but gradually dwindled as the Desert San became better known as a private luxury health resort to which many world prominent persons were lured to rest and relax in the beautiful atmosphere.

During the '30s, the privately-owned hospital became a haven for wealthy and renowned patients suffering from arthritis and respiratory diseases.

As late as 1940, Tucson was still a part of the



Front entrance of Tucson Medical Center, 1929.

"Old West" with a comfortable 35,000 residents. Soon, however, the town found itself with a swollen population of war personnel. As large numbers of people moved to the Old Pueblo from every part of the nation, the needs of the comunity for services of every kind quickly changed and expanded.

Sanitorium to Close

Mr. Erickson died in 1936, but Mrs. Erickson continued operating the Desert Sanitorium. The outbreak of the Second World War, which caused the curtailment of civilian travel and stationed thousands of service men at Davis Monthan Air Force Base, changed the luxury aspect of the private institution and made it necessary to devote part of its facilities to local patient care. Wartime shortages in personnel and medical supplies brought additional stress. As a result, Mrs. Erickson decided to close the Desert San.

Citizens of Tucson and surrounding areas became greatly concerned at the prospect of closing the facility since hospital beds were already at a premium. The population of the area had grown to 80,000 and the loss of the San's 91 beds would leave Tucson with less than 350 beds to serve the entire area.

Desert San Given to Community

The Rev. George Ferguson went to see Mrs. Erickson in New York to arrange for the purchase of the San as a community hospital. Mrs. Erickson generously offered to donate the 160 acres with its 15 buildings and all equipment to the community and citizens of Tucson. The $1 million gift carried the stipulation that the community must raise the money to convert the San to a hospital, and then operate it for five years.

The first Board of Directors was organized in November, 1943, with the Rev. Ferguson as President. A fund drive was started and plans were made for the conversion of the Desert San to the Tucson Medical Center, Incorporated. The aim of the new hospital was to provide hospital services without the usual hospital atmosphere. Instead of resident physician staffing, TMC was



Front entrance of Tucson Medical Center, 1944.



Front entrance of Tucson Medical Center, 1975.

to function as an open staff workshop for all Pima County physicians.

The proposed physical changes would extend the north wing of the administration building to incorporate the small Apache court; move the surgical suite and the X-ray department to the administration area; and remodel the medical building into a 28 bed maternity unit.

TMC Opens

The new 142-bed hospital's opening date depended almost entirely upon permission from the war production board for the start of structural changes. On November 9, 1944, TMC admitted its first patient, to Papago court. A large number of Tucsonians attended the official open house which was held February 25, 1945.

The first few years were filled with anxiety and hard work. Time and again the town was canvassed for funds in order to keep the hospital doors open one more year. At the end of five years the Tucson community had accomplished its goal. The contract had been fulfilled, the bed capacity was 210, and TMC was valued at $2,000,000.

In 1947 Miss Margaret Knight was instrumental in organizing the Auxiliary, and by 1949 they had acquired 50 members, adopted a constitution, formally joined the AHA Auxilians, and were giving invaluable service to TMC.

Though the community had been successful in carrying out Mrs. Erickson's stipulation, there were many crises during the ensuing years as the young hospital fought for survival. It was burdened with debts and confronted with the necessity of raising funds to provide enough beds to accommodate the increasing number of patients from the growing population of Tucson. Located outside the reach of city services, poor roads and undependable public transportation, it was forced to operate as a self-contained institution and many of its employees lived on the grounds. Through it maturing process, the hospital was the subject of much study and analysis by experts.

Today, TMC retains its uniqueness. All but three of the original courts are still in use. Maricopa, an isolation unit for many years, still serves in this capacity, having been incorporated into the southwing area. Navajo was last used to house in-service education before being torn down to provide space for the new main kitchen. Equipment and interiors of the remaining courts have been modernized, but the court buildings still look much the same from the outside, surrounded by the desert vegetation.

The principles that guided TMC in the past are closely linked with the present and serve as stepping stones to the future. Each year of service to the community confirms that original dedication, "To provide excellent medical care with the most convenience at the least cost."

Book Review

The Vitamin C Cookbook
Cory Servaas, M.D., and Walter Mathews
with an introduction by Linus Pauling, Ph.D.
Doubleday & Company, Garden City, N.Y., 1975
154 pp $6.95

If you are an aficionado of Pauling and Vitamin C, then here is your recipe book. There are meticulous recipes for appetizers, main courses, soups and desserts—with explicit directions on how to fortify these foods with Vitamin C.

For one who finds the culinary feat of parching corn a chore, I must leave to you to test and try the efficacy of these proposed delectable dishes. Hospital dietitians could peruse this with profit.

John W. Kennedy, M.D.

Letters to Editor

Dr. William McGrath
Arizona Medicine
Phoenix, Arizona

Dear Dr. McGrath,

It's wrong to start a letter with "I" . . . but I've never written a letter quite like this one before, and I can't think of any other way to begin it! So . . . I work for the Arizona Historical Society, and part of my job involves cross-filing magazines, Journals and other periodical publications. One of the periodicals we receive is *Arizona Medicine*, and the kind of article I usually read and cross-file in *Arizona Medicine* concerns medical history in Arizona, by "Dry-Gulch Jake" as a rule. But somewhere along the line I noticed your editorials, and started to read them every month. Then I went through the back issues to find any that I might have missed earlier, and Xeroxed the ones I liked best so that I could take them home and read them again, and share them with my family.

So, the only purpose of this letter is just to let you know that I have enjoyed your editorials *very* much, and that they have been more than helpful to me. They are always supportive and encouraging, and they make me feel happier and a little more sure of myself. Since I haven't paid you a cent for these "professional services," I thought the least I could do, would be to write and let you know how much benefit I've had from your work, and to thank you.

Sincerely,

Lori Davisson
Research Assistant
The Arizona Historical Society

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

LEGISLATIVE COMMITTEE

Meeting of the Legislative Committee of the Arizona Medical Association, held Saturday, February 7, 1976 at 810 West Bethany Home Road, Phoenix, Arizona, convened at 12:45 p.m., Edward Sattenspiel, M.D., Chairman, presiding.

DEFINITION OF TERMS

ACTIVE SUPPORT: Means approval of bill and maximum staff time and financial expenditure (including legal counsel) will be made to achieve enactment.

GENERAL SUPPORT: Means approval of the principle of the bill, but that staff time and financial expenditures will be limited.

NO ACTION: Means no position has been taken one way or another on the bill.

NON-SUPPORT: Means disapproval of the bill but that staff time and financial expenditure will be limited to defeat the bill.

ACTIVE NON-SUPPORT: Means disapproval of bill and that maximum staff time and financial expenditure (including legal counsel) will be expended to achieve defeat of the bill.

PROPOSED LEGISLATION

Marijuana Bill

The new marijuana bill (number not assigned) to be introduced by Senator Felix will decriminalize possession of 50 grams or less or marijuana. Possession, sale, etc. of the substance would still be illegal; however, this bill would eliminate incarceration of those found in possession of small amounts. Messrs. Ayers and Vermeire, representing the Arizona State Bar, expressed the Bar's position on the bill and general discussion ensued. Dr. Laurence Linkner, Chairman of Drug Abuse Section of ArMA, presented a resolution as follows for the Comittee's approval.

WHEREAS, The Arizona Medical Association Board of Directors in March 1973 moved to support the American Medical Association House of Delegates' position of June 1972 regarding marijuana, to wit:

"We recommend that the personal possession of insignificant amounts of that substance (marijuana) be considered at most a misdemeanor with commensurate penalties applied."

AND WHEREAS the body of accumulated scientific evidence, since that time, continues to support the above position;

AND WHEREAS, Senate Bill , introduced into the Arizona State Legislature in February 1976 supports the above position; therefore be it

RESOLVED: that the Arizona Medical Association Board of Directors actively move the adoption of Senate Bill in the 1976 Legislature of the State of Arizona.

IT WAS MOVED AND CARRIED TO ACCEPT THE ABOVE RESOLUTION AND PRESENT SAME TO THE ARMA BOARD OF DIRECTORS.

It was noted that although acceptance of the above resolution by the Committee provides support to the bill, no financial support will be given to the bill's enactment.

HB 2110 — Repeal of Medicaid

It was stated that the Governmental Services' Section on Medicaid is in the midst of formulating a recommendation to the Board of Directors with regard to the Medicaid program.

IT WAS MOVED AND CARRIED TO REFER HB 2110 TO THE SECTION ON MEDICAID.

Licensed Alcohol Treatment Centers

This bill provides for the establishment of licensed alcoholism treatment facilities and local alcoholism reception agencies and prescribes the procedures for the care and treatment of intoxicated persons, persons incapacitated by alcohol and alcoholics.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

SB 1204 — Health Care Institutions — Staff — Podiatrists

This bill mandates that health care institutions provide staff privileges for podiatrists and provides that granting staff privileges to podiatrists shall not affect the classification of health care institutions.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

Emergency Medical Services

Removes jurisdiction for emergency medical services from the Department of Public Safety and places its responsibility on the Department of Health Services.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

Emergency Medical Transportation Services

Removes jurisdiction for emergency medical transportation (ambulances) from the Corporation Commission.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

Ambulance Services — Regulation

Places regulation of ambulance services with the Department of Health Services.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

Public Facilities Inclusion — Alcoholism

This bill allows existing public facilities to be used for the treatment of alcoholism. The bill would allow the smaller communities to use their health clinics, etc. for the treatment of alcoholism; they would otherwise be required to construct special facilities for this treatment.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

Group Insurance — Scope of Coverage

This bill allows for the coverage of alcoholism, drug addiction, mental illness and maternity to be included in group disability policies.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE

SUPPORT TO THIS BILL.

SB 1132 — Drug Detoxification Standards

This bill provides for the adoption of drug detoxification and maintenance standards and regulations by the Department of Health Services.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

Health Care Institutions — Licensing — Regulation

This bill prescribes certain exemptions from licensing as health care institutions; prescribes time for license application; provides for licensee compliance with state fire code and inspection by state fire inspectors; prescribes hearing procedures.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

HB 2026 — Immunization Prior to School Attendance

This bill provides immunization procedures for children prior to school enrollment and prescribes conditions of enrollment. Because this bill will prohibit children from entering school without immunization, it was felt by the Committee that some children may be unduly jeopardized because of parental negligence.

IT WAS MOVED AND CARRIED TO GIVE NON-SUPPORT TO THIS BILL.

HB 2133 — Immunizations Vaccinations — Schools — Counties

Provides that county health departments provide immunizations and vaccinations in common schools and provides for school district clerical help.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE SUPPORT TO THIS BILL.

SB 1207 - Immunizations - Vaccinations - County Health Departments

Requires that county health departments provide immunizations and vaccinations. Although similar to HB 2133, this bill enumerates immunizations and vaccinations which are to be given. While the Committee agrees with the concept of giving jurisdiction for immunizations and vaccinations to the county health departments, it did not feel that the actual medications to be given should be included in the legislation.

IT WAS MOVED AND CARRIED TO GIVE GENERAL NON-SUPPORT TO THIS BILL.

SB 1022 - School Employees - Tuberculosis Examination

This bill removes authority of school boards to require examination of employees for Tuberculosis.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

HB 2131 - Mental Health Evaluation - Evaluator

This bill prescribes who shall perform mental health evaluations. The bill was introduced to allow a change in the procedure for performing mental health evaluations in counties with populations less than 250,000. The existing statute, which requires these evaluations to be conducted by two physicians, a psychiatric social worker and a certified psychologist, will remain applicable in counties of 250,000 plus populations.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

HB 2041 - Mental Health Evaluation - Commitment - Procedures

This bill was introduced in the House by Dr. Flynn and prescribes mental evaluation and commitment orders the jurisdiction of the Superior Court and provides for certain other commitment procedures.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE SUPPORT TO THIS BILL.

HB 2132 - Optometry - Qualifications for Practice

This bill provides that diagnostic pharmaceutical agents authorized by the Board of Optometry may be used in the practice of Optometry and prescribes qualifications for applicants to practice Optometry.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SB 1205 - Optometry - Qualifications for Practice - Board

Provides that diagnostic pharmaceutical agents authorized by the Board of Optometry may be used in the practice of Optometry and provides for an increase in membership in the Optometry Board.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SB 1177 - Medical Treatment to Sustain Life

Prescribes procedures for executing document for termination of medical treatment; provides for revocation; provides for maintenance of documents and reliance on most recently dated document; prescribes immunity and violation and provides for injunction and declaratory judgement. In that there exists much conflict of opinion on this subject and because there seem to be several problem areas within the bill, it was generally felt that no support or non-support should be given to this until more clearly defined legislation is presented.

IT WAS MOVED AND CARRIED TO GIVE NO ACTION TO THIS BILL.

SB 1202 - Statewide Health Coordinating Council

This bill provides for a statewide health coordinating council and prescribes its powers, duties, etc. in line with Public Law 93-641. Although this bill was introduced by the Senate Committee on Health and Welfare, the Chairman of the House Health Committee remains opposed to its enactment. Dr. Dandoy pointed out that while there may be opposition to this legislation, the federal legislation is already on the books and the State should have a mechanism for implementation.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SB 1133 - Health Services

This bill relates to the Department of Health Services and serves as a housekeeping measure, i.e. removes several references to State Board of Health, etc. General support was given to this bill with the exception that the deletions on page 3, lines 7, 10, 11, 12, 13 and 19 not be made. These lines provide for 60 days prior publication of departmental regulations.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL PROVIDED THAT ON PAGE 3, LINES 7, 10, 11, 12, 13 AND 19 NOT BE DELETED.

SB 1146 - Death - Pronouncement - Confirmation

This bill provides for confirmation of death by an independent physician and prescribes when pronouncement of death shall be made. Discussion ensued as to whether this bill related only to the pronouncement of death for donor purposes or in all cases of death. The following action was taken until clarification of the bill can be made to the Committee.

IT WAS MOVED AND CARRIED TO GIVE NO ACTION TO THIS BILL.

HB 2196 - Pharmacy Permit - Suspension - Revocation Conditions

This bill removes authorization to suspend, revoke or place on probation a pharmacy permit for advertising prescription, dangerous or narcotic drugs by price or name.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

HB 2080 - Vehicle Emissions Inspection - Repeal

Dr. Dandoy requested from the Committee an indication as to how members felt regarding the repeal of the vehicle emissions inspection statute. Response from the Committee resulted in the following action.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

OTHER BUSINESS

Discussion ensued regarding the Committee's responsibility on legislative matters as to whether or not only health-related concerns should be voiced by the Committee and also by the Association. No action was taken.

Meeting adjourned 3:30 p.m.

Gary L. Barnett
Associate Executive Director

NOMINATING COMMITTEE

The meeting of the Nominating Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, February 7, 1976, a quorum being present, convened at 2:05 p.m., William G. Payne, M.D. Past-President and Chairman, presiding.

NOMINATIONS

Following a review of the bylaws regarding nominating restrictions, the following slate of officers were nominated:

VACANCIES IN OFFICE	NOMINEES
PRESIDENT-ELECT (1976-77)	JOHN F. KAHLE, M.D. JAY L. SITTERLEY, M.D.
VICE-PRESIDENT (1976-77)	RICHARD L. DEXTER, M.D. M. DAVID BEN-ASHER, M.D.
SECRETARY (1976-77)	WILLIAM E. CRISP, M.D. PAUL F. PALMER, M.D.
TREASURER (1976-77)	JOHN T. CLYMER, M.D. RICHARD DALE, M.D.
SPEAKER OF THE HOUSE (1976-77)	ROBERT A. PRICE, M.D. JAMES A. AUSTIN, M.D.
EDITOR-IN-CHIEF (1976-77)	JOHN W. KENNEDY, M.D. RICHARD H. WOHL, M.D.
DELEGATE TO THE AMA (1-1-77-12-31-78)	ARTHUR V. DUDLEY, M.D. JAMES L. PARSONS, M.D.
ALTERNATE DELEGATE TO THE AMA (1-1-77-12-31-78)	WILLIAM C. SCOTT, M.D. ROBERT E. HASTINGS, JR., M.D.
CENTRAL DISTRICT DIRECTOR (1976-79) Maricopa	REGINALD J.M. ZELUFF, M.D. ROBERT L. HAGAN, M.D.
CENTRAL DISTRICT DIRECTOR (1976-79) Maricopa	RONALD D. SUTTER, M.D. WILFRED M. POTTER, M.D.
NORTHWESTERN DISTRICT DIRECTOR (1976-79) Coconino, Mohave, Yavapai	MORRIS E. POWELL, M.D. ROBERT A. BUTLER, M.D.
SOUTHERN DISTRICT DIRECTOR (1976-79) Pima	ROBERT P. PURPURA, M.D. STUART W. WESTFALL, M.D.

Meeting adjourned 2:55 p.m.

William G. Payne, M.D.
Past-President and Chairman

MUTUAL INSURANCE COMPANY OF ARIZONA

BOARD OF TRUSTEES

The organizational meeting of the Board of Trustees of the Mutual Insurance Company of Arizona held at 810 West Bethany Home Road, Phoenix, AZ on Saturday, February 7, 1976, convened at 2:03 p.m., Jack E. Brooks, M.D., acting president presiding.

COMPANY NAME

IT WAS MOVED AND CARRIED THAT THE FIRST CHOICE FOR A NAME FOR THE COMPANY BE: MUTUAL INSURANCE COMPANY OF ARIZONA. THAT THE SECOND CHOICE BE: ARIZONA MUTUAL INSURANCE COMPANY. THESE NAMES SUBJECT TO PROPER CLEARANCE WITH THE ARIZONA CORPORATION COMMISSION BY MR. ROCA.

ELECTION OF OFFICERS

JACK E. BROOKS, M.D. WAS UNANIMOUSLY ELECTED PRESIDENT OF THE NEW MUTUAL INSURANCE COMPANY. EDWARD SATTENSPIEL, M.D. WAS UNANIMOUSLY ELECTED SECRETARY OF THE NEW MUTUAL INSURANCE COMPANY. OTHER OFFICERS, IF NEEDED, TO BE ELECTED IN THE FUTURE AS APPROPRIATE.

COVERAGES TO BE OFFERED

It was determined to offer professional liability insurance, office premises liability insurance and related types of insurance. Should the need arise in the future to write other types of coverages, changes in the articles would be made at that time.

ANNOUNCEMENT

It was agreed that Dr. Schaller and Mr. Robinson, in conjunction with Mr. Thomas Grogan, would draft a possible release about the new company for review by Dr. Brooks and legal counsel.

MANAGEMENT COMPANY

It was determined that the final decision on choice of a management firm be delayed until legal counsel can explore various matters with Mr. Thomas Grogan of Marsh & McLennan.

INCORPORATORS

Mr. Robinson reported that Dr. Scott, President, Arizona Medical Association, has designated the following to be the incorporators of the new mutual insurance company.

Jack E. Brooks, M.D.
2310 East Marshall
Phoenix, Arizona 85016

William E. Crisp, M.D.
6051 East Cactus Wren Road
Scottsdale, Arizona 85253

Walter R. Eicher, M.D.
Box 457
Chandler, Arizona 85224

James M. Hurley, M.D.
5840 North 45th Place
Phoenix, Arizona 85018

Patrick P. Moraca, M.D.
6042 North 2nd Street
Phoenix, Arizona 85012

William G. Payne, M.D.
133 East 15th Street
Tempe, Arizona 85281

Bruce E. Robinson
10002 North 35th Street
Phoenix, Arizona 85028

Edward Sattenspiel, M.D.
530 East Glenn Drive
Phoenix, Arizona 85020

Donald F. Schaller, M.D.
3327 East Mariposa Street
Phoenix, Arizona 85018

Lawrence J. Shapiro, M.D.
5601 North Delos Circle
Paradise Valley, Arizona 85253

Meeting adjourned 3:18 p.m.

Edward Sattenspiel, M.D.
Secretary

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, AZ on Saturday, February 7, 1976, a quorum being present, convened at 10:07 a.m., William C. Scott, M.D., president and chairman, presiding.

MALPRACTICE INSURANCE

Dr. Brooks reviewed the current status of H. B. 2001 (Malpractice Legislation) as it has emerged from the House of Representatives and is presently being debated in the Arizona State Senate.

MUTUAL INSURANCE COMPANY

Mr. Paul Roca, special counsel, and Dr. Brooks reviewed the problems, mechanisms and need for creating a mutual insurance company for the purpose of providing professional liability insurance summarized in the following steps:

1. ArMA authorize formation of mutual casualty insurance company. ArMA select company name, designate ten persons to act as incorporators, select five physicians to be directors, select officers. ArMA agree to pay company's noninsurance expenses, estimated initially at $50,000.

2. Company requires immediate surplus of $1,000,000 in order to do business by 4 1 76. Three possible methods:
 a. ArMA levy and collect immediate assessment of $500 per member, then lend $1,000,000 to mutual on subordinated 6% note.
 b. ArMA borrow $1,000,000 from bank, and lend it in the same way.
 c. Company sell to ArMA members $1,000,000 in subordinated 6% notes.
 d. Possible combinations of above.

3. Company *must* increase its surplus by $2,000,000 in 24 months, and actuarial advice is to increase surplus during first three years of operation by half as much as gross premiums. Company will make combined securities and insurance offering:
 a. Payment by ArMA member during each of first three years:
 (1) Annual premium to company for primary coverage (see rates below).
 (2) 15% of premium to State JUA for excess coverage.
 (3) 5% subordinated notes equal to half of annual premium to company, less prior purchase if 6% notes have been sold to members for initial financing. Potential yield: $13,293,000, less prior purchases if any.
 (4) Contribution to ArMA for debt retirement and expenses: $40 unless ArMA advanced initial $1,000,000, in which event first year contribution of $540 and $40 annually thereafter.
 b. New physician joining ArMA in later years buys on same basis.
 c. Nonmembers and other health care providers buy on same basis except contribution doubled.

Booz-Allen Proposed Rates

Class	No. of Arizona Doctors in Class	Premiums at Booz-Allen Rates	Yield in Dollars
1	159	$1,700	$ 270,300
2	692	2,000	1,384,000
3	159	2,900	461,100
4	40	3,700	148,000
5	244	6,000	1,464,000
6	65	7,700	500,500
7	171	7,700	1,316,700
8	342	9,700	3,317,400
Totals	1,872	$4,500 (Average)	$8,862,000

Extensive discussion ensued culminating in the following actions:

Formation

IT WAS MOVED AND CARRIED TO AUTHORIZE THE FORMATION OF A MUTUAL INSURANCE COMPANY, IMPLEMENTATION OF WHICH, IS CONTINGENT UPON SATISFACTORY LEGISLATION BEING ENACTED.

Board of Trustees

IT WAS MOVED AND CARRIED TO ELECT THE FOLLOWING SIX MEN AS THE ORIGINAL BOARD OF TRUSTEES OF THE MUTUAL INSURANCE COMPANY:

Jack E. Brooks, M.D.	Bruce E. Robinson
William E. Crisp, M.D.	Edward Sattenspiel, M.D.
Patrick P. Moraca, M.D.	Donald F. Schaller, M.D.

Name

IT WAS MOVED AND CARRIED TO AUTHORIZE THE BOARD OF TRUSTEES OF THE NEW MUTUAL INSURANCE COMPANY TO DETERMINE THE NAME FOR THE COMPANY.

Incorporators

IT WAS MOVED AND CARRIED TO NAME THE NEW BOARD OF TRUSTEES AS THE INCORPORATORS ALONG WITH FOUR OTHERS TO BE NAMED BY THE PRESIDENT.

Incorporating Expense

IT WAS MOVED AND CARRIED TO APPROVE UP TO $50,000.00 FOR INCORPORATING EXPENSES WITH THE UNDERSTANDING THAT THESE EXPENSES WOULD BE REPAID TO THE ASSOCIATION WHEN THE COMPANY BECOMES OPERATIONAL AND IN FINANCIAL POSITION TO REPAY THE ADVANCED EXPENSES.

Capitalization Requirements

IT WAS MOVED AND CARRIED TO AUTHORIZE THE BORROWING OF ONE MILLION DOLLARS TO BE LOANED TO THE NEW MUTUAL INSURANCE COMPANY FOR THE PURPOSES OF SATISFYING STATUTORY CAPITAL REQUIREMENTS. SAID LOAN TO BE REPAID DURING THE FIRST TWELVE MONTHS OF OPERATION FROM THE SALE OF SUBORDINATED NOTES.

Maricopa County Medical Society Letter 1/26/76

The Chairman reviewed the subject letter which recommends that if a mutual insurance company is formed, that it have powers to write other appropriate forms of insurance.

It was determined to refer this matter to the Board of Trustees of the new mutual insurance company for their consideration.

BOMEX APPOINTMENTS

It was pointed out that if H.B. 2001 is passed in its present form, the Board of Medical Examiners would be expanded to eleven of which nine would be physicians. The following outline was presented:

Current Members

R. L. Dexter, M.D. - Term expires 6 30 76 - Pima County

W. E. Bishop, M.D. - Term expires 6 30 77 - Gila County

C. D. Buster, M.D. - Term expires 6 30 78 - Yuma County

M. R. Spanier, M.D. - Term expires 6 30 79 - Yavapai County

G. Scharf, M.D. - Term expires 6 30 80 - Maricopa County

Proposed Legislation (Passed by House of Representatives on 2 2 76

Nine (9) professional members representing at least three (3) counties and of which not more than four (4) members shall be from any one county.

In new appointments, the Governor *may* appoint members from a list of recommendations from ArMA and in doing so could appoint four members from any county not currently holding membership. However, it is anticipated that ultimate membership will include, four members from Maricopa, three from Pima and two from other counties.

In that event, the Board of Directors should recommend at this time, two members from Pima and two members from Maricopa, probably as follows:

1. Maricopa - 1 year appointment - Term expires 6 30 77
2. Pima - 2 year appointment - Term expires 6 30 78
3. Maricopa - 3 year appointment - Term expires 6 30 79
4. Pima - 4 year appointment - Term expires 6 30 80

Then would require a one year re-appointment on 6 30 76 (hopefully Dr. Dexter) which would result in following schedule:

W. E. Bishop - 6 30 77 - For reappointment or replacement from Outstate

New Appointee - For reappointment or replacement from Maricopa

C. D. Buster, 6 30 78 - For reappointment or replacement from Outstate

New Appointee For reappointment or replacement from Pima

M. R. Spanier - 6 30 79 - For reappointment or replacement from Maricopa

New Appointee For reappointment or replacement from Pima

G. Scharf - 6 30 80 - For reappointment or replacement from Maricopa

New Appointee - For reappointment or replacement from Pima

R. L. Dexter - 6 30 81 - For replacement from Maricopa

Dr. Scott asked that each member take the matter under advisement so that recommendations can be made at the 2 21 76 Board meeting.

A.H. ROBINS 1976 PHYSICIAN AWARD FOR COMMUNITY SERVICE

IT WAS MOVED AND CARRIED TO DESIGNATE DALE F. WEBB, M.D., YUMA, AS THE RECIPIENT OF THE 1976 PHYSICIAN AWARD FOR COMMUNITY SERVICE. DR. WEBB HAVING BEEN NOMINATED FOR THIS AWARD BY THE YUMA COUNTY MEDICAL SOCIETY.

Meeting adjourned 12:56 p.m.

William E. Crisp, M.D.
Secretary

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEDICAL EDUCATION.

ARIZONA STATE HOSPITAL, PHOENIX
GOOD SAMARITAN HOSPITAL, PHOENIX
PHOENIX INDIAN MEDICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEDICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARD.

INFECTIOUS DISEASES

Saturday, April 17, 1976
St. Mary's Hospital & Health Center
Century Room A
8 a.m. to 12 noon

SPONSOR: The Medical Education and Library Committee, St. Mary's Hospital

CONTACT:
Medical Staff Office
St. Mary's Hospital and Health Center
P.O. Box 5386
Tucson, AZ 85703

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

ARTHRITIS '76 SYMPOSIUM

April 23, 1976
Arizona Inn (Tucson Room), Tucson, AZ
9 a.m.-4:30 p.m.

SPONSOR: Arthritis Services Program and Arthritis Foundation

CONTACT:
E. Riggs
3813 E. 2nd Street
Tucson, AZ 85716

Approved for 6 required hours toward the ArMA Certificate in Contining Medical Education.

CONFERENCE ON NEONATAL-PERINATAL MEDICINE

April 21-23, 1976
Scottsdale Hilton, Scottsdale, AZ

SPONSOR: Perinatal Pediatrics Sect. of Dist. VIII of American Academy of Pediatrics; Good Samaritan Hospital, Dept. of Perinatal Education; and Dept. of Perinatology of The Children's Hospital, Denver, CO.

CONTACT:
Belton P. Meyer, M.D.
Dept. of Perinatal Education
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 14 required hours toward the ArMA Certificate in Continuing Medical Education.

85th ANNUAL MEETING ARIZONA MEDICAL ASSOCIATION, INC.

Safari Hotel, Scottsdale, AZ
April 27-May 1, 1976
Scientific Sessions
April 29, 30, 1976

SPONSOR: Arizona Medical Association, University of Utah College of Medicine

CONTACT:
Arizona Medical Association
810 W. Bethany Home Road
Phoenix, AZ 85013

Approved for 14½ required hours toward the ArMA Certificate in Continuing Medical Education.

CLINICAL RECOGNITION AND MANAGEMENT OF HEART DISEASE 1976

April 18-20, 1976
University Hospital Auditorium, Tucson, AZ

SPONSOR: U of A College of Medicine

CONTACT: Frank I. Marcus, M.D.
Gordon A. Ewy, M.D.
Arizona Medical Center
Tucson, AZ 85724

Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education.

TROPICAL PUBLIC HEALTH (399 SS)

March 28-May 6, 1976
Arizona Medical Center, Tucson, AZ
2-4 p.m., Tue. & Thurs.

SPONSOR: Dept. of Family and Community Medicine, U of A, College of Medicine

CONTACT:
Andrew W. Nichols, M.D.
Dept. of Family and Community Medicine
University of Arizona
College of Medicine
Tucson, AZ 85724

Approved for 2 required hours per session toward the ArMA Certificate in Continuing Medical Education.

DYAZIDE®

Trademark

Each capsule contains 50 mg. of Dyrenium® (triamterene, SK&F) and 25 mg. of hydrochlorothiazide.

MAKES SENSE

TRIAMTERENE CONSERVES POTASSIUM WHILE HYDROCHLOROTHIAZIDE LOWERS BLOOD PRESSURE

FOR LONG-TERM CONTROL OF HYPERTENSION*

Serum K^+ and BUN should be checked periodically. (See Warnings Section.)



Before prescribing, see complete prescribing information in SK&F literature or *PDR*. The following is a brief summary.

Warning
This fixed combination drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

*Indications: *Edema:* That associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. *Mild to moderate hypertension:* Usefulness of the triamterene component is limited to its potassium-sparing effect.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 capsules; in Single Unit Packages of 100 (intended for institutional use only).

SK&F Co., Carolina, P.R. 00630
Subsidiary of SmithKline Corporation



HELP STOP THE TEARS

of colic, diarrhea or similar malady

USE LOMA LINDA'S i-SOYALAC

i-Soyalac and regular Soyalac are palatable, readily digestible and assimilated. It simulates human milk i appearance, taste and texture. It is complete with vitamins and minerals. It is suitable for all infants and childre Soyalac is especially recommended b physicians for children who are sensi tive to or cannot tolerate cow's milk.

For nearly a quarter of a century, Soyalac has proven its value in pro- moting growth and development – as shown by extensive clinical data.

Available without carrageenan in: SOYALAC Liquid Concentrate, SOYALAC Powder and i-SOYALAC Liquid Concentrate.

Now in 32 oz. size. Ready-to-Serve

Send to: Loma Linda Foods SJ-4
Medical Products Division
Riverside, Calif. 92505

Please send me free sample and literature.

Name_____

Address_____

City_____

State_____ Zip_____

Or a simple note on your prescription form will do.



i-SOYALAC contains no corn products.

PHYSICIAN TRAINING PROGRAM

October 1, 1975 - June 30, 1976
Tucson Medical Center, Tucson, AZ

SPONSOR: Arthritis Services Program

CONTACT:
Beth Ziebell, Prog. Dir.
3813 E. 2nd St.
Tucson, AZ 85716

Approved for 30 required hours toward the ArMA Certificate in Continuing Medical Education.

STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p.m.
Arizona State Hospital, Phoenix, AZ

SPONSOR: Arizona State Hospital

CONTACT:
Howard E. Wulsin, M.D.
Arizona State Hospital
2500 E. Van Buren
Phoenix, AZ 85008

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wednesday, September - May
4:00 p.m. to 5:30 p.m.
Arizona Medical Center, Tucson, AZ, Rm. 8403

SPONSOR: Department of Psychiatry, U of A
College of Medicine

CONTACT:
Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ per session toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month
Plaza International, Tucson, AZ

SPONSOR: U of A Medical Center, Dept. of Radiology

CONTACT: Irwin M. Freundlich, M.D.
Arizona Medical Center
Dept. of Radiology
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital and Health Center,

SPONSOR: Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice.

CONTACT:
Richard Silver, M.D.
Chairman, Medical Education
and Library Committee
Century Medical Plaza, Suite 160
1701 West St. Mary's Road
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuiing Medical Education.

TUMOR BOARD CONFERENCE

Every Friday at Noon

Kiva Conference Room
Phoenix Memorial Hospital

SPONSOR: Phoenix Memorial Hospital

CONTACT:
Howard Kimball, M.D.
333 West Thomas Road
Phoenix, AZ 85013

Approved for credit toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month

Kiva Conference Room
Phoenix Memorial Hospital

SPONSOR: Medical Staff of Memorial Hospital

CONTACT:

George Scharf, M.D.
1201 South 7th Avenue
Phoenix, AZ 85007

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

PULMONARY DISEASE GRAND ROUNDS

Mondays — 12 Noon

D-5 North Conference Rm., Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Pulmonary Disease Teaching Service
Good Samaritan Hospital

CONTACT:
Bernard E. Levine, M.D.
Pulmonary Function Laboratory
Good Samaritan Hospital
1033 E. McDowell Hospital
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURGICAL GRAND ROUNDS
4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

When you call our computer, it talks back.

That's right. It answers in a clear, *human* voice. And tells you, step by step, exactly how to record a customer account transaction. Repeats itself to assure accuracy. Then gives you a total balance for final verification.

It's all push-button easy, because it's all done by touch-tone telephone. All you do is call in on a special Valley Bank number. And have a nice little chat with our talking Accounts Management computer.

Something else. Immediately upon cut-off each month, all the paper work is handled automatically. Itemized customer statements stuffed, mailed out. Duplicates, recaps, reports sent to you promptly.

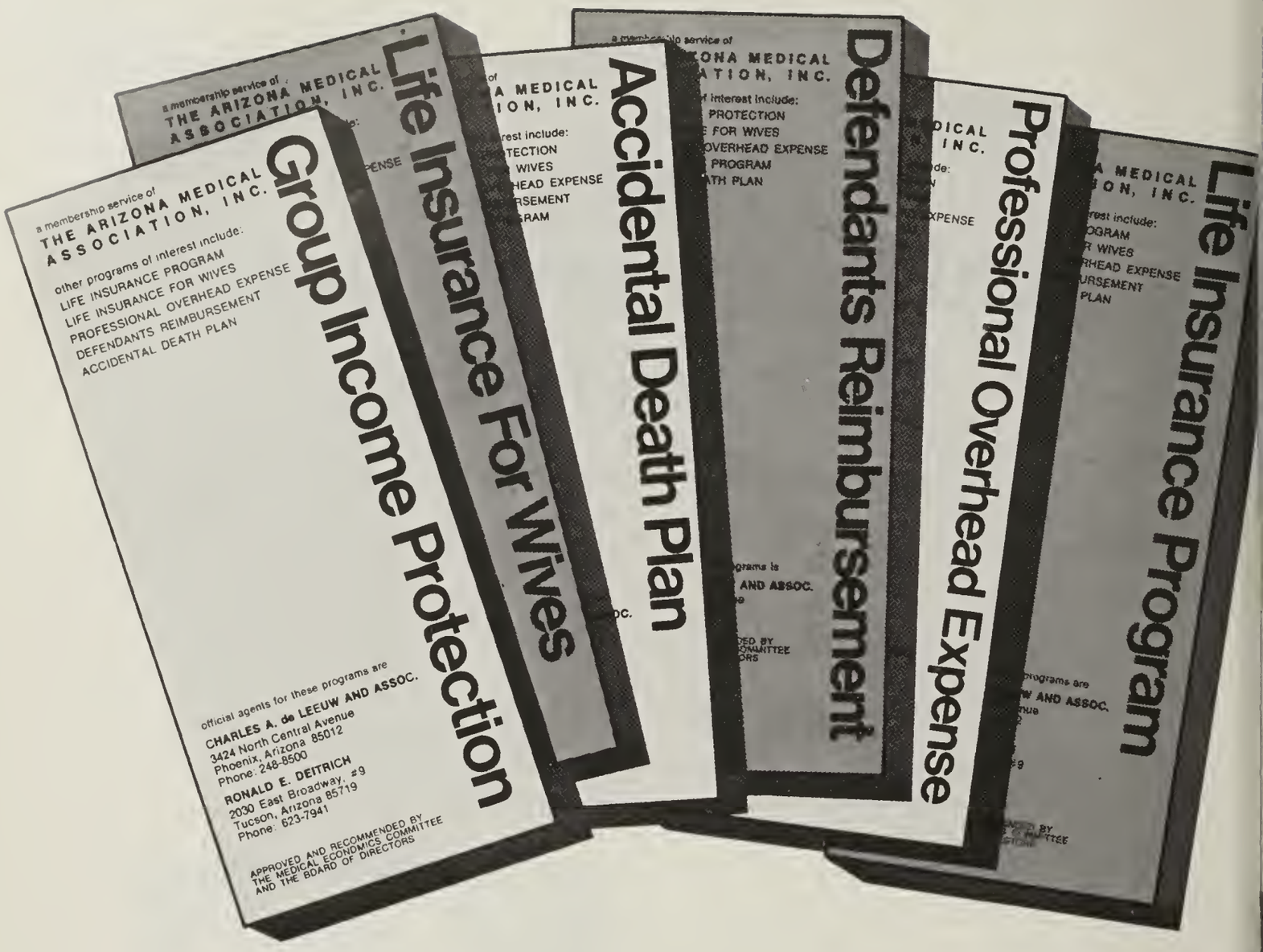
So if you average over 100 customer statements a month, get acquainted with our talking computer. We'll introduce you. Just call us. In Phoenix: 261-1666. In Tucson: 792-7370.



A touch-tone phone puts you in touch.

We go out of our way for you.
Valley National Bank

More than 150 offices throughout Arizona
Deposits insured to $40,000 by Federal Deposit Insurance Corporation



Quality protection
Association approved & recommended

1. These 6 plans were especially created for the medical profession under the auspices of The Arizona Medical Association as a unique membership service. Approved by the Medical Economics Committee.

2. In addition to excellence of coverage there is supervision and control by your Association.

3. In many instances...a substantial saving in required premiums.

4. Inquiries may be directed to the Association office or to the licensed resident agents.

THE ARIZONA MEDICAL ASSOCIATION, INC. ORGANIZED 1892 ARIZONA INCORPORATED 1950

Charles A. deLeeuw and Assoc.
3424 N. Central Ave.
Phoenix, Az. 85012
248-8500

Ronald Deitrich
2030 E. Broadway, Suite 9
Tucson, Az. 85719
792-1020

Medical Center X-Ray and Clinical Laboratory

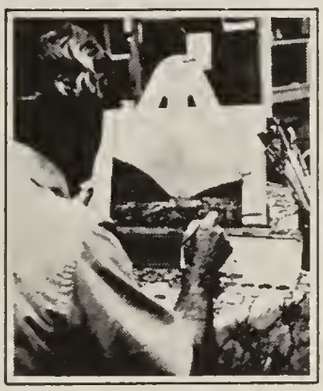
1313 North 2nd Street
Phoenix, Arizona
Phone 258-3484

CLINICAL PATHOLOGY
DIAGNOSTIC X-RAY
PORTABLE X-RAY AND E.K.G. SERVICE
ELECTROCARDIOGRAPHY

R. Lee Foster, M.D., F.A.C.R., F.A.C.P., Director

Diplomates of American Board of Radiology

George B. Kent, Jr., M.D., Consultant Pathologist



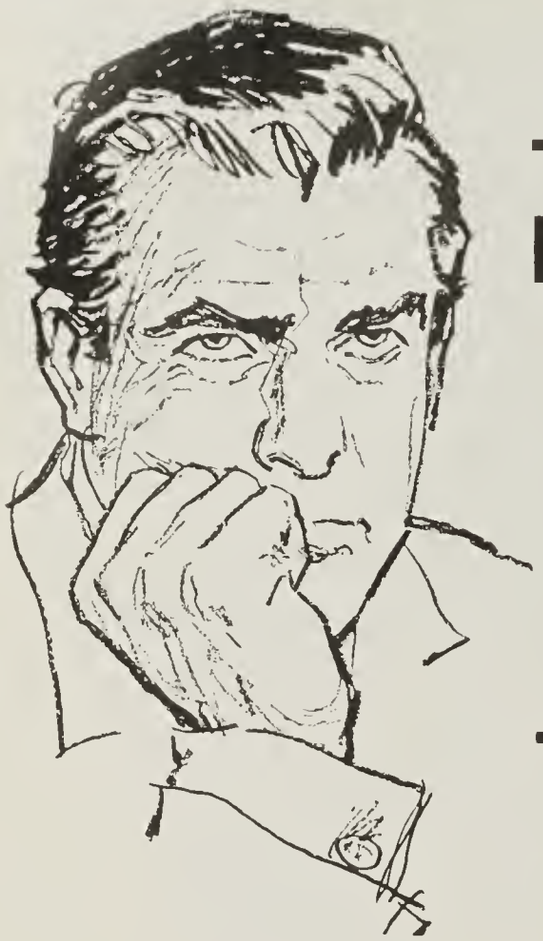



a structured program for the patient.

Every detail for the patient's well-being is carefully planned and evaluated in conjunction with his personal physician

CH
camelback hospital
5055 north thirty-fourth street
phoenix, arizona 85018

A NON-PROFIT COMMUNITY PSYCHIATRIC HOSPITAL



DOCTOR, WHO WILL TAKE CARE OF YOU WHEN YOU RETIRE?

YOU WILL!

Most of the retirement dollars you will need for tomorrow must come from dollars you invest today. Only a life insurance company can provide — through an annuity — a guaranteed income for as long as you, or you and your wife live. Other options include guaranteed income for a definite number of years, or a specific amount each year for as long as the proceeds and interest last.

In addition to the great flexibility of annuities, they may also provide:

- Attractive investment return
- Tax-sheltered treatment of deposits
- Guarantees in case of death prior to retirement
- Maximum retirement income
- Emergency funds

Learn more about annuities and about HBA Life — an Arizona Company that has worked closely with the medical profession for over 30 years. Call or write us. No obligation.

THE HBA LIFE INSURANCE COMPANY

1337 N. FIRST ST. (P.O. BOX 1272), PHOENIX, AZ 85001 (602) 258-4885

Your United Banker can reduce your tax bite.



United Bankers can now offer you two tax sheltered plans to cut your tax bite now...while you build retirement security for the future.

NO PENSION/PROFIT SHARING PLAN?

If you work but are not covered by a company pension/profit sharing plan, you qualify for a tax sheltered United Bank Individual Retirement Account (IRA). It lets you protect up to $1500 a year from the tax man until you retire. An IRA plan at United Bank could reduce your annual tax by several hundred dollars.

SELF-EMPLOYED?

If you're self-employed you could qualify for a United Bank Keogh retirement savings plan. It lets you protect up to $7500 a year from income tax until you retire. It could reduce your annual tax bite by up to $3750 and your funds can be invested in a variety of ways.

For more information or to obtain detailed brochures, contact any United Banker.

The Businessman's Bank

UNITED BANK
OF ARIZONA

An affiliate of U|B Financial Corporation
MEMBER F.D.I.C.

Directory

THE ARIZONA MEDICAL ASSOCIATION, INC., ORGANIZED 1892, 810 W. BETHANY HOME ROAD, PHOENIX, ARIZONA 85013.

OFFICERS AND DIRECTORS — 1975-76

President—William C. Scott, M.D. U. of A., Dept. of OB-GYN, Tucson 85724
President-Elect—Edward Sattenspiel, M.D. 333 W. Thomas Rd., Phoenix 85013
Vice President—John F. Kahle, M.D. 715 N. Beaver, Flagstaff 86001
Secretary—William F. Crisp, M.D. 926 E. McDowell Rd., Phoenix 85006
Treasurer—Richard L. Dexter, M.D. P. O. Box 26926, Tucson 85726
Past President—William G. Payne, M.D. P. O. Box V, Tempe 85281
Editor-In—Chief—John W. Kennedy, M.D. 705 E. Tuckey Ln., Phoenix 85014
Delegate to AMA—Seymour I. Shapiro, M.D. 5402 E. Grant Rd., No. E, Tucson 85712
Delegate to AMA—Richard O. Flynn, M.D. 2210 S. Mill Ave., Tempe 85281
Delegate to AMA—W. Scott Chisholm, Jr., M.D. 1158 E. Missouri Ave., Phoenix 85014
Alt. Delegate to AMA—Arthur V. Dudley, Jr., M.D. 1601 N. Tucson Blvd., Tucson 85716
Alt. Delegate to AMA—John J. Standifer, M.D. 412 E. Oak St., Kingman 86401
Alt. Delegate to AMA—Patrick P. Motaca, M.D. 217 E. Virginia, Phoenix 85004
AMA Trustee—Daniel T. Cloud, M.D. 3411 N. 5th Ave., Phoenix 85013

DISTRICT DIRECTORS

Central District—Reginald J. M. Zehnder, M.D. 217 E. Virginia, Phoenix 85004
Central District—George L. Hoffmann, M.D. 138 W. 5th Place, Mesa 85201
Central District—James M. Hinley, M.D. 3143 N. 32nd St., Phoenix 85018
Central District—Wallace A. Reed, M.D. 1040 E. McDowell Rd., Phoenix 85006
Central District—Lawrence J. Shapiro, M.D. 550 W. Thomas Rd., Phoenix 85013
Northeastern District—Jack L. Mowrey, M.D. P. O. Box 887, Lakeside 85929
Northwestern District—Richard L. McDonald, M.D. 718 N. Beaver, Flagstaff 86001
Southeastern District—Edward R. Curtis, M.D. 508 5th Ave., Safford 85546
Southern District—Richard S. Armstrong, M.D. P. O. Box 12787, Tucson 85732
Southern District—Henry P. Limbacher, M.D. 2205 E. Hampton, Tucson 85719
Southern District—Vernon E. Lovett, M.D. 5402 E. Grant Rd., Tucson 85712
Southwestern District—Glen H. Walker, M.D. 291 W. Wilson, Coolidge 85228

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

President—Fernando de la Cueva, M.D. Pavo-135-306, Guadalajara, Jal. Mexico
President-Elect—Thomas H. Taber, Jr., M.D. 333 E. Virginia, Suite #212, Phoenix, AZ 85012
Vice-President—Pedro Gortazar Hijar, M.D. Guadalajara, Jal. Mexico
Secretary-USA—Schuyler V. Hilts, M.D. Tucson Medical Center, P.O. Box 6607, Tucson, AZ 85716
Secretary-Mexico—Felix Torres Herrera, M.D. Guadalajara, Jal. Mexico
Treasurer-USA—Lucy A. Vernetti, M.D. 333 W. Thomas Rd., Ste. 207, Phoenix, AZ 85013
Treasurer-Mexico—Franco Leopoldo C. Guadalajara, Jal. Mexico
Executive Secy.—USA—Mrs. Virginia E. Bryant 333 W. Thomas Rd., Ste. 207, Phoenix, AZ 85013
Executive Secy.—Mexico—Dr. Alfredo Patron Mazatlan, Sinoala, Mexico

COMMITTEES — 1975-76

ARTICLES OF INCORPORATION & BYLAWS: Charles F. Henderson, M.D., Chairman (Phoenix); Philip F. Dew, M.D., (Tucson); Arnold H. Dysterheft, M.D. (Lakeside); Paul B. Jarrett, M.D., (Phoenix); Clarence F. Yount, Jr., M.D.

BENEVOLENT AND LOAN FUND: Arthur V. Dudley, M.D., Chairman, (Tucson); George Adams, M.D., (Tucson); Richard L. Dexter, M.D. (Tucson); R. Lee Foster, M.D. (Phoenix); Edward J. Lefeber, M.D. (Mesa); Cecil C. Vaughn, Jr., M.D. (Phoenix); Carl E. Voldeng, M.D. (Phoenix).

FINANCE: Richard L. Dexter, M.D., Chairman (Tucson); William J. Dunn, M.D. (Phoenix); Herbert C. Erhart, Jr., M.D. (Springerville); James L. Grobe, M.D., (Phoenix); Charles C. Hedges, Jr., M.D. (Phoenix); Gerald Marshall, M.D. (Phoenix); Robert P. Purpura, M.D., (Tucson); Otto S. Shill, Jr., M.D. (Tempe); Seymour I. Shapiro, M.D. (Tucson); George Wallace, M.D. (Scottsdale).

GOVERNMENTAL SERVICES: Arthur D. Nelson, M.D., Chairman, (Scottsdale); John A. Ash, M.D., (Phoenix); Otto L. Bendheim, M.D., (Phoenix); Suzanne F. Dandox, M.D., (Phoenix); Donn G. Duncan, M.D., (Tucson); Walter R. Eicher, M.D. (Chandler); Lloyd S. Epstein, M.D., (Tucson); John W. Heaton, M.D., (Phoenix); Charles Kahl, M.D. (Phoenix); Frank V. Keary, M.D., (Tucson); Louis C. Kossuth, M.D. (Phoenix); Joseph J. Likos, M.D. (Phoenix); Joseph L. Marcarelli, M.D., (Sun City); Dermont W. Melick, M.D., (Tucson); O. Melvin Phillips, M.D., (Scottsdale); Wallace A. Reed, M.D. (Phoenix); Helen M. Roberts, M.D. (Phoenix); Marvin C. Schneider, M.D., (Phoenix).

HEALTH MANPOWER: Louis C. Kossuth, M.D., Chairman (Phoenix); Casey D. Blitt, M.D., (Tucson); Bruce N. Curtis, M.D., (Safford); Alexander Kelter, M.D., (Tucson); Edward J. Lefeber, Jr., M.D. (Mesa); Roger A. Lueck, M.D., (Phoenix); Dermont W. Melick, M.D., (Tucson); John B. Muller, M.D., (Phoenix); Andrew W. Nichols, M.D., (Tucson); Robert St. John, M.D., (Phoenix); Manus R. Spanitel, M.D. (Prescott); H. Stephens Thomas, M.D., (Phoenix); Jesse W. Tapp, Jr. M.D., (Tucson); Herbert L. Winograd, M.D., (Phoenix).

HISTORY & OBITUARIES: John W. Kennedy, M.D., Chairman (Phoenix); Francis J. Bean, M.D. (Tucson); Walter Blazie, M.D., (Kingman); C. Bland Giddings, M.D., (Mesa); John R. Green, M.D., (Phoenix); Abe I. Podolsky, M.D. (Yuma); Jay I. Sitterley, M.D., (Flagstaff).

LEGISLATIVE: Edward Sattenspiel, M.D., Chairman, (Phoenix); Richard W. Abbuhl, M.D., (Phoenix); James E. Campbell, M.D., (Phoenix); John S. Carlson, M.D., (Phoenix); W. Scott Chisholm, Jr., M.G. (Phoenix); Sam C. Colachis, Jr., M.D. (Phoenix); Richard L. Collins, M.D., (Scottsdale) Donald F. Griess, M.D., (Tucson); Louis Hirsch, M.D., (Tucson); Robert D. Hedgell, M.D., (Prescott); John P. Holbrook, M.D., (Tucson); Gerald Marshall, M.D., (Phoenix); Richard McGill, D.O., (Phoenix); Gerald F. McNally, M.D., (Prescott); Donald R. Miles, M.D., (Phoenix); R. Michael O'Hara, M.D., (Phoenix); Robert J. Olivei, III, M.D., (Tucson); Ratibor Patovich, M.D., (Phoenix); O. Melvin Phillips, M.D., (Scottsdle); Wilfred M. Pottel, M.D., (Scottsdale); Paul L. Schnur, M.D., (Tucson); Berton Siegel, D.O., (Phoenix); John Vosskuhler, M.D., (Flagstaff); Dennis Weiland, M.D., (Scottsdale).

MATERNAL & CHILD HEALTH CARE: Raymond J. Jennett, M.D., Chairman (Phoenix); Frederic W. Baum, M.D. (Tempe); Walter B. Cherny M.D., (Phoenix); C. Donald Christian, M.D. (Tucson); Warren A. Colton, Jr., M.D., (Tempe); William J. R. Daily, M.D., (Phoenix); Jack H. Demlow, M.D., (Tucson); Glenn M. Friedman, M.D. (Scottsdale); Harlan R. Giles, M.D., (Tucson); Walter K. Kuppard III, M.D. (Phoenix); Belton P. Meyer, M.D., (Phoenix); William J. Moore, M.D., (Phoenix); William G. Payne, M.D., (Tempe); David Pent, M.D., (Phoenix); Hermann S. Rhu, Jr., M.D., (tucson); Paul W. Whitmore, D.O., (Phoenix).

MEDICAL ECONOMICS: Robert P. Purpura, M.D., Chairman (Tucson); Richard S. Armstrong, M.D., (Tucson); Albert C. Asendorf, M.D., (Phoenix); Chester G. Bennett, M.D., (Phoenix); Avi Ben-Ora, M.D., (Scottsdale); Charles M. Beigschneider, M.D., (Scottsdale); Arthur M. Brandt, M.D., (Tucson); Sam C. Colachis, Jr., M.D. (Phoenix); Charles F. Dalton, M.D., (Phoenix); George L. Hoffmann, M.D., (Mesa); Frederick W. Jensen, Jr., M.D., (Phoenix); John F. Kahle, M.D., (Flagstaff); Howard N. Kandell, M.D., (Phoenix); Patrick P. Motaca, M.D., (Phoenix); Paul L. Schnur, M.D., (Tucson); George Serbin, M.D., (Phoenix); Richard W. Switzer, M.D., (Tucson); Burton E. Weissman, M.D., (Phoenix); Reginald J. M. Zehnder, M.D., (Phoenix).

MEDICAL EDUCATION: Robert E. T. Stark, M.D., Chairman (Phoenix); James F. Brady, Jr., M.D., (Tucson); Daniel B. Carroll, M.D., (Phoenix); Melvin I. Cohen, M.D., (Phoenix); George D. Comerci, M.D., (Tucson); David J. Crosby, M.D., (Phoenix); Kenneth A. Dregseth, M.D., (Sierra Vista); Francis T. Flood, M.D., (Phoenix); Harry W. Hale, Jr., M.D. (Phoenix); Robert E. Hastings, Jr., M.D., (Tucson); M. Wayne Heine, M.D., (Tucson); Raymond J. Jennett, M.D. (Phoenix); Howard N. Kandell, M.D., (Phoenix); Jack M. Layton, M.D., (Tucson); Laurence R. Mansur, M.D. (Safford); William F. Sheely, M.D., (Phoenix); Lawrence Z. Stein, M.D., (Tucson); Jesse W. Tapp, Jr., M.D., (Tucson); Aston B. Taylor, M.D., (Phoenix); Albert G. Wagner, M.D. (Phoenix).

OCCUPATIONAL HEALTH: Joseph M. Hughes, M.D., Chairman, (Phoenix); Floyd K. Berk, M.D., (Tucson); Richard Besserman, M.D., (Phoenix); Earl M. Best, M.D., (Phoenix), Sheldon Davidson, M.D., (Phoenix); Walter V. Edwards, M.D., (Phoenix); Robert V. Horan, M.D., (Morenci); Robert B. Leonard, M.D., (Phoenix), Florian R. Rabe, M.D. (Scottsdale); Eugene J. Ryan, M.D. (Phoenix); William C. Trier, M.D. (Tucson); Maier Tuchler, M.D. (Phoenix); Willis A. Warner, M.D., (Phoenix).

PHYSICIAN REHABILITATION: Richard E. H. Dursberg, M.D., Chairman (Phoenix); John Bartness, M.D., (Phoenix); Otto L. Bendheim, M.D., (Phoenix); William E. Bishop, M.D., (Globe); John F. Clymer, M.D., (Tucson); Donald L. Damstra, M.D. (Phoenix); Bernard M. Kuhr, M.D., (Tucson); Laurence M. Linkner, M.D., (Phoenix); Walter B. Tomlinson, M.D. (Elgin); Karl E. Voldeng, M.D., (Phoenix); Eleanor A. Waskow, M.D. (Phoenix).

MEMBERS ARE URGED TO BRING MATTERS ON INTEREST AND CONCERN TO THE CHAIRMEN OF THE APPROPRIATE COMMITTEE OR TO THE ATTENTION OF ANY MEMBER OF THE BOARD OF DIRECTORS.

AN INVOLVED MEMBERSHIP IS THE BASIS FOR AN EFFECTIVE ASSOCIATION.

PROEESSIONAL: Robert S. Ganelin, M.D., Chairman, (Phoenix); Paul M. Bindelgas, M.D., (Phoenix); Paul B. Borgeson, M D., (Phoenix); John A. Bruner, M.D., (Phoenix); L. Philip Carter, M.D., (Phoenix); James L. Grobe, M.D. (Phoenix); Joseph W. Hanss, Jr., M.D., (Phoenix); James M. Hurley, M.D., (Phoenix); Helen Johnson, M.D., (Tucson); Laurence M. Linkner, M.D., (Phoenix); William G. Payne, M D., (Tempe); Edward Sattenspiel, M.D., (Phoenix); Donald F. Schaller, M.D., (Phoenix); George A. Spendlove, M.D., (Phoenix); Neil O. Ward, M D., (Phoenix).

PUBLIC RELATIONS: Selma E. Targovnik, M.D., Chairperson (Phoenix); W. David Ben-Asher, M.D., (Tucson); E. Eredrick Bloemker, M D., (Phoenix); J. Walter Brock, M.D., (Scottsdale); Ronald L. Christ, M.D., (Yuma); Julian DeVries, (Phoenix); Edward B. Grothaus, M D., (Sierra Vista); Robert A Johnson, M.D., (Phoenix); Robert E. Kelling, Sr., M.D., (Ajo); Irving M. Pallin, M.D., (Sun City); William Russell, Jr., M.D., (Phoenix); Morton S. Thomas III, M D., (Wickenburg).

PUBLISHING: John W. Kennedy, M.D., Chairman, (Phoenix); Walter V. Edwards, M.D., (Phoenix); Gerald Kaplan, M.D., (Phoenix); George Lastnick, M.D., (Sun City); William B. McGrath, M.D., (Phoenix); David Pent, M.D., (Phoenix); Michael M. Schreiber, M.D., (Tucson); David C. H Sun, M.D. (Phoenix).

SCIENTIFIC ASSEMBLY: Milton S. Dworin, M.D., Chairman, (Tucson); Merrill M. Abeshaus, M.D., (Elagstaff); Suresh C. Anand, M D. (Phoenix); Eloyd K. Berk, M.D., (Tucson); Thomas E. Bittker, M.D., (Phoenix); W. Scott Chisholm, M.D., (Phoenix); Vicent A. Fulginiti, M.D., (Tucson); Otto Gambacorta, M.D., (Tucson); Jerome Gerendasy, M D., (Mesa); Laurence M. Haas, M.D., (Tucson); Timothy R. Harrington, M.D., (Phoenix); Clifford J. Harris, Jr., M D., (Mesa); Thomas F. Hartley, M D., (Phoenix); Wayne H. Heine, M D., (Tucson); Thomas S. Henry, M.D., (Flagstaff); James M Hurley, M D., (Phoenix); Mark M. Kartchner, M D., (Tucson); Norman N Komar, M.D., (Tucson); Eugene Leibsohn, M D., (Phoenix); Philip Levy, M.D., (Phoenix); William S Nevin, M D., (Tucson); Neopito L. Robles, M.D., (Tucson); Richard A. Silver, M.D., (Tucson); Donald P. Speer, M.D., (Tucson); Louis S San, M D., (Phoenix); Wilhur C. Voss, M.D., (Tucson); Donald J. Ziehm, M.D., (Phoenix).

COUNTY MEDICAL SOCIETY OFFICERS, 1976-77

APACHE: Robert D. Martin, M.D., President, Prof. Plaza Bldg., Pinetop, 85835; Johannes J. Heynekamp, M.D., Secy., White Mountain Community Hospital, Springerville, 85938.

COCHISE: Joroge Gaytan, M.D., President, 640 Kent St., Douglas, 85607; Robert H. Page, M.D., Secy., 640 Kent St., Douglas, 85607.

COCONINO: Joseph R. Reno, M.D., President, Box 310, Flagstaff, C. Herbert Fredell, M.D., Secy., 120 Fine St., Flagstaff, 86001.

GILA: B. J. Collopy, M.D., President, Miami Inspiration Clinic, 85539; David B. Gilbert, M.D., Secy., Box 1030, Payson, 85541.

GRAHAM: Laurence R. Mansur, M.D., President, 2016 W. 16th St., Safford, 85546.

GREENLEE: Robert V. Horan, M.D., President, Morenci Hospital, Morenci, 85540; Lyle H. Boyea, M.D., Secy., Morenci Hospital, Morenci, 85540.

MARICOPA: William R. Meyers, M.D., President; Max L. Wertz, M.D., Secy. (Society address: 2025 N. Central Ave., Phoenix, 85004).

MOHAVE: Earl S. Gilbert, M.D., President, Mohave General Hospital, Kingman, 86401; Irving S. Young, M.D., Mohave General Hospital, Kingman, 86401.

NAVAJO: Robert J. Haley, III, M.D., President, P.O. Box 700, Holbrook, 86025; Harry Beckwith, M.D., Secy., East 2nd & Colorado Ave., Winslow, 86047.

PIMA: M. David Ben-Asher, M.D., President; Stuart W. Westfall, M.D., Secy., (Society address): 2555 E. Adams St., Tucson, 85716).

PINAL: Howard Hyde, M.D., President, 1023 E. Florence, Casa Grande, 85222; Hugh A. Richmond, M.D., Secy., 900 E. Florence Blvd., Casa Grande, 85222.

SANTA CRUZ: Enrique Suarz, M.D., President, 711 Morley Ave., Nogales, 85621; Charles S. Smith, M.D., Secy., Box 1382, Nogales, 85621.

YAVAPAI: David C. Duncan, M.D., President, 801 Miller Valley Rd., Prescott, 86301; Ronald Gardner, M.D., Secy., 1000 Willow Creek Rd., Prescott, 86301.

YUMA: William Hultgen, M.D., President, 423 W. 8th St., Yuma, 85364; J. Frank Martin, M.D., Secy., 1150 W. 24th St., Yuma, 85364.

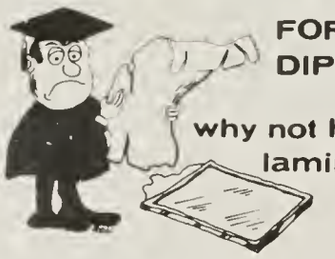
WOMAN'S AUXILIARY TO THE ARIZONA MEDICAL ASSOCIATION 1975-76

PRESIDENT Mrs. Howard W. Kimball (Ella)
414 W. Northview, Phoenix 85021
PRESIDENT-ELECT Mrs. George L Hoffmann (Julie)
540 Mesa Vista Lane, Mesa 85203
1ST VICE PRESIDENT Mrs. Joseph Reno (Maude)
621 W. Beal Rd . Flagstaff 86001
2ND VICE PRESIDENT Mrs. Arnold Hollander (Carol)
75745 Sabino Vista Dr., Tucson 85715
RECORDING SECY Mrs. Albert Asendorf (Donna)
502 E. Claremont St., Phoenix 85012
TREASURER Mrs. Thurman Leonard (Ann)
2261 E Glenn, Tucson 85719
DIRECTOR 1974-76 Mrs. Robert Delph (Grace)
600 Robin Lane, No. 24, Yuma 85364
DIRECTOR 1975-76 Mrs. Raymond Vaaler (Ann)
3624 N. 54th Court, Phoenix 85018
DIRECTOR 1975-77 Mrs. Albert Wagner (Helen)
3216 E. Meadowbrook, Phoenix 85018
CHAPLAIN Mrs. Sam M. Mackoff (Selma)
5343 N 23rd St. Phoenix, 85016
CORRESP. SECY. Mrs. Charles Kalil (Ylma)
1300 E. Missouri, Phoenix 85014
HISTORIAN Mrs. Melvin Phillips (Jean)
1001 Norris Rd., Prescott 86301
PARLIAMENTARIAN Mrs. Lewis S. Winter (Jean)
1714 E. Rose Lane, Phoenix 85016

STANDING AND SPECIAL COMMITTEES

AMA-ERF Mrs. Earl Gilbert (Vicki)
3010 Van Martier Court, Kingman 86401
BYLAWS, PROCEDURES, GUIDELINES Mrs. Paul Jarrett (Beverley)
501 E. Pasadena, Phoenix, 85012
COMMUNICATIONS Mrs. Lynn Newman (Joyce)
4531 W. Seldon Lane, Glendale 85302
COMMUNITY HEALTH Mrs. Gordon Tekell (Pat)
1391 Gateway Ave., Yuma 85364
CONVENTION Mrs. Ronald Johnson (Terry)
532 W. Northview, Phoenix 85021
FAMILY HEALTH Mrs. Edward Bryne-Quin (Ruth)
7081 E. Opatas Place, Tucson 85715
FINANCE Mrs. John Hayes (Shirley)
717 W. El Camino, Phoenix 85021
GEMS Mrs. Ronald Kolker (Ruth)
6211 Camino Almonte, Tucson 85718
HAMER EDUCATION LOAN EUND Mrs. William Bishop (Marion)
211 W. 3rd, Globe 85501
HEALTH EDUCATION Mrs. Charles C. Hedges, Jr., (Dottie)
5227 E. Fresno Dr., Phoenix 85018
HEALTH MANPOWER Mrs. Luis Tan (Mary Jo)
3510 E. Nita Rd., Paradise Valley 85253
HOSTESS Mrs. Rex Vaubel
117 W. Glenn Dr., Phoenix 85021
INTERNATIONAL HEALTH Mrs. J. O. Sodersirom (Juanita)
805 Prescott Heights Dr., Prescott 86301
LEGISLATION Mrs. John A. Ash (Agnes)
5818 N. 3rd Ave., Phoenix 85013
MEMBERSHIP Mrs. Joseph Reno (Maude)
621 W. Beal Rd., Flagstaff 86001
PROGRAM Mrs. Arnod Hollander (Carol)
7545 Sabino Vista Dr., Tucson 85715

YOU WORKED HARD



FOR THAT DIPLOMA..

why not have it laminated?

it will last a lifetime....

THE PLAQUE SHOP

Wood plaques — Ready to hang
No glass to break — Moisture proof
Dirt proof — Impressive.
Our plaques are manufactured locally.

arizona laminating service inc

7231 EAST FIRST AVENUE •
SCOTTSDALE, ARIZONA 85251 •
(602) 945-9338

MEDICAL BOOKSTORE



The only bookstore in Arizona devoted exclusively to books for the medical profession.

MEDICAL BOOKSTORE
College of Medicine
University of Arizona
Tucson, Arizona 85724
Phone: 882-6669

HOBBY HORSE RANCH SCHOOL

A School For Exceptional Children

The Hobby Horse Ranch School is both home and school for a small group of children. It welcomes the child who is mentally retarded and physically handicapped as well as the backward child who suffers no physical handicap.

The Hobby Horse Ranch School is a branch of Fairview School in Fishkill, New York which was established in 1936.

Directors: Blanche C. Lightowler, B.A.
Matthew W. Lightowler

P.O.B. 44, Cortaro, Ariz.



Emergency — our business

Air Evac — serving all Arizonans — can be ordered by any physician anytime to transport a patient anywhere. Medically trained flight crew is airborne in 30 minutes.

(602) 254-7150

AIR EVAC

Samaritan Health Service
Phoenix, Arizona

Where Scottsdale Swings

4601 N. Scottsdale Rd.
Scottsdale, AZ





These shingles make A great building

Camelback Professional Building
5051 N. 34th STREET
PHOENIX, ARIZONA 85018
(602) 955-6200

general psychiatry / child psychiatry / psychoanalysis, clinical psychology / and family counseling.

Pharmacy Directory

FAIRMONT PHARMACY

AN INDEPENDENT
WITH
CHAIN STORE PRICES

3231 East McDowell Road, Phoenix, Arizona

BRidge 5-5719 **Free Delivery**

FREE RADIO EQUIPPED DELIVERY

In Scottsdale call

Lute's Scottsdale Pharmacy

For

PRESCRIPTIONS

3904 N. Scottsdale Rd. 945-8420 - 945-8429

Next to the 1st National Bank

Open 'til 10 p.m. daily — 9 p.m. Sundays

FREE DELIVERY

CALL

254-2606

IF BUSY CALL 252-1573

"Satisfying Customers Since 1920"

- COSMETICS
- SUNDRIES
- SODA BAR
- LIQUOR



MacALPINE'S
DRUG STORE
THE Rexall STORE
2303 N. 7th ST.
DON BRISCOE – PHARMACIST

Classified

DANNY T. SEIVERT
INSURANCE

Professional Programs for Professional Men

70 E. Mitchell Dr., Suite 6
Phoenix, Arizona 85012
263-9090

JOHNSON-BOZZANI
PORSCHE | AUDI

1976 911, NEW 912E, 914
NOW IN STOCK

DAVE NEAL
SALES & LEASING



320 N. CENTRAL AVENUE
PHOENIX, ARIZONA 85004
PHONE (602) 253-1161



Medical Transcription For Physicians and Hospitals

MULLEN MEDICAL SERVICE, INC.

4445 North 36th Street
Phoenix, Arizona 85018
Telephone (602) 955-0763

DOCTORS' CENTRAL DIRECTORY

Helen M. Barrasso, R. N., Director

For Emergencies or in Absence of Your Doctor

CALL 327-7471

At Your Service 24 Hours Daily

2807 East Speedway Tucson, Arizona

"Established 1932"

MICRO-BILLING

The burden-free, low-cost statement service that saves you time, space and money. Positively accurate billings go on time every month regardless of work load, illness, or vacations. No contract to sign, equipment to purchase, or change required to existing posting procedures. Micro-billing also provides positive protection against fire, theft or damage to your valuable records. Call 265-4729, or write American Billing Corp., 4014 N. 7th Street, Phoenix, AZ 85014.

SEEKING POSITION

Formally trained P.A. with experience desires position in Primary Care (Internal Medicine, Family Practice, OB-GYN or Pediatrics). Arizona licensed, nationally certified and nursing background in OB-GYN. Willing to relocate. Salary, hours and benefits negotiable. Local references. Box 10, Arizona Medicine, 810 W. Bethany Home Road, Phoenix, AZ 85013.

INTERNIST NEEDED IMMEDIATELY

To take over established practice. Full or part time. No investment required. Phone: (602) 264-4437.

TUCSON

Wilmot Medical Building — adjacent to St. Joseph's Hospital. 720-1620 sq. ft. available. $7.00 sq. ft., includes all utilities, janitorial and maintenance. For information please call (602) 327-5914. Executive Property Management, subsidiary of Schomac Corporation.

SHARE M.D. OFFICE

Tempe surgeon has contemporary oversized office designed for two M.D.'s. . . . Will sublease remainder for low volume type practice in another speciaty. Shalimar Medical Center, Tempe, in view of Desert Samaritan Hospital. Call 838-3130.

FOR LEASE

New Medical Center across from Yavapai County Hospital in mile high Prescott, Arizona. Only 2 suites remaining. Terrific opportunity for OTO or Dentist. Good lease terms available with doctor owner. Contact Stan Nyquist, Clements Realty (602) 277-7238.

POSITION AVAILABLE

Full-time ER Physician—for modern, expanding, fully-accredited 467-bed regional medical center with low malpractice ins. rates, salary and fringes negotiable, progressive staff with specialty back up. Excellent schools, college facilities, cultural activities, recreational activities. Contact Dan S. Wilford, Adm., North Mississippi Medical Center, 830 South Gloster St., Tupelo, MS., 38801. (601) 842-3632.

POSITION AVAILABLE

Texas. Career-oriented ER physicians wanted by ACEPT-oriented Southwest group. Flexible work schedules, competitive renumeration and malpractice coverage. Contact: S. Powers, M.D. 2410 S. Voss, Ste. G116, Houston, Texas 77057 (713) 790-1420. Ref. ad. A.

ArMA OFFERS A NEW

INSURANCE FORM

FOR ALL CLAIMS

An order today will stop the confusion of multiple insurance forms
Sample available on request

COST: $1.75 per hundred

To: Arizona Medical Association
810 West Bethany Home Rd.
Phoenix, AZ 85013

Please send me hundred approved insurance forms costing $1.75 per hundred.

NAME

Address

Bill me ☐ Payment Enclosed ☐

Index to Advertisers

American Billing Corp. 334

Arizona Laminating 332

Armour Pharmaceuticals 254

Air Force 260

Blue Shield 264

Burroughs Wellcome
Neosporin Ointment 265

Camelback Hospital 327

Camelback Professional Bldg. 333

Cardiovascular Diagnostic Labs, Ltd. 262

Classified 334, 335

Doctors Central Directory 334

Eli Lilly
Kefzol 266

HBA Life Insurance 328

Hobby Horse Ranch School 332

Johnson Bozzani 334

Loma Linda
I-Soyalac 332

Medical Bookstore 332

Medical Business Consultants 258

Medical Center X-Ray & Clinical Labs 327

Mullen Medical Service 334

National Casualty Co. 326

Pharmacy Directory 334

Pharmaceutical Manuf. Assoc. 256, 257

Psychiatric Institute of Mexico City 262

PVO
Saffola 259

Office Systems & Machines, Inc. 261

Roche Labs
Valium Second Cover, 253
Dalmane 294, 295, 296
Bactrim Third Cover

Roerig & Co.
Antivert 293

Roswell Bookbinding 258

Safari Hotel 333

Samaritan Health Service 332

Smith, Kline & French
Dyazide 321

Danny T. Sievert
Insurance 334

United Bank 329

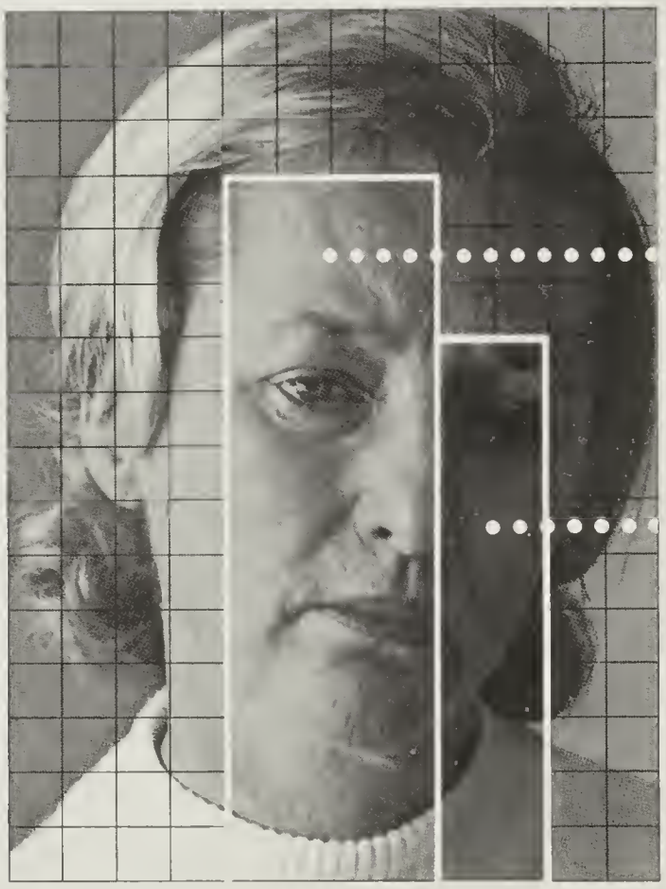
Valley National Bank 325

Westwood Pharmaceuticals
PreSun 263

ARIZONA MEDICINE



Both often



Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful

respond to one

According to her major
mptoms, she is a psychoneu-
otic patient with severe
nxiety. But according to the
escription she gives of her
elings, part of the problem
ay sound like depression.
his is because her problem,
though primarily one of ex-
ssive anxiety, is often accom-
nied by depressive symptom-
ology. Valium (diazepam)
n provide relief for both—as
e excessive anxiety is re-
ved, the depressive symp-
ms associated with it are also
ten relieved.

There are other advan-
ges in using Valium for the
anagement of psychoneu-
tic anxiety with secondary
epressive symptoms: the
ychotherapeutic effect of
alium is pronounced and
pid. This means that im-
ovement is usually apparent
in the patient within a few days rather than in a week or two, although it may take longer in some patients. In addition, Valium (diazepam) is generally well tolerated; as with most CNS-acting agents, caution patients against hazardous occupations requiring complete mental alertness.

Also, because the psychoneurotic patient's symptoms are often intensified at bedtime, Valium can offer an additional benefit. An *h.s.* dose added to the *b.i.d.* or *t.i.d.* treatment regimen can relieve the excessive anxiety and associated depressive symptoms and thus encourage a more restful night's sleep.



Valium®
(diazepam) Ⓘⓥ

2-mg, 5-mg, 10-mg scored tablets

in psychoneurotic
anxiety states
with associated
depressive symptoms

rveillance because of their predisposi-
n to habituation and dependence. In
egnancy, lactation or women of child-
aring age, weigh potential benefit
ainst possible hazard.

ecautions: If combined with other psy-
otropics or anticonvulsants, consider
refully pharmacology of agents em-
oyed; drugs such as phenothiazines,
rcotics, barbiturates, MAO inhibitors
d other antidepressants may potentiate
action. Usual precautions indicated in
tients severely depressed, or with latent
pression, or with suicidal tendencies.
Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

ROCHE
Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

YOU ARE THE JUDGE

the evidence is in.

	LETTER® (sodium levothyroxine, Armour) Tablets	SYNTHROID® (sodium levothyroxine)
Sodium levothyroxine:	YES	YES
Less Expensive:	YES*(Costs 10% less)	NO
Potency Coded Tabs:	YES (Armacode®)	NO
Color-Coded Tabs:	YES	YES
Scored Tabs:	YES	YES
7 Tablet potencies:	YES (0.15 mg. is new)	NO

EXHIBIT "A"

Doctor: Please write your verdict.

*American Druggist Blue Book, 1975.

LETTER®

(Sodium Levothyroxine, Armour) Tablets

Armour Pharmaceutical Company, Phoenix, Arizona 85077

MAY 1976 / VOL. 33, NO. 5

ARIZONA MEDICINE

JOURNAL OF ARIZONA MEDICAL ASSOCIATION • MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

EDITOR'S PAGE

NATIONAL MEDICAL SERVICE NEW ZEALAND STYLE, 380

DEAN'S PAGE

INTRODUCTION, 343
George D. Comerci, M.D.

INDEX TO ADVERTISERS, 430

COVER

The faculty of the University of Arizona College of Medicine present the "Original Articles" Section of this special issue. Page 343.

Published monthly by The Arizona Medical Association, Inc., with offices at 810 W. Bethany Home Rd., Phoenix, Arizona 85013. Subscription $10 a year, single copy $1.00. Second class postage paid at Phoenix, Arizona and at additional mailing offices.

ORIGINAL ARTICLES

PLEASE SEE PAGE 334 FOR TABLE OF CONTENTS OF THIS SPECIAL ISSUE.

CLINICAL ONCOLOGY IN ARIZONA

CANCER CHEMOTHERAPY: THE PRIMARY PHYSICIAN'S ROLE, 381
Richard E. Lloyd, M.D.

SEMINARS IN ENDOCRINOLOGY AND METABOLISM

ACROMEGALY: "THE LONG AND SHORT OF IT", 385
Gregory Herring, M.D.

SEMINARS IN CHEST MEDICINE

THE OFFICE MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE, 389
William C. Weese, M.D.

DEPARTMENT OF HEALTH SERVICES

MOBILE DENTAL PROGRAM, 393
Suzanne Dandoy, M.D.

LETTERS TO EDITOR, 394

ARMA MEDICAL HISTORY

SIERRA VISTA COMMUNITY HOSPITAL, 395
Kenneth A. Dregseth, M.D.

RADIOLOGY CASE OF THE MONTH

RADIOLOGY CASE NUMBER 10, 396
Tim B. Hunter, M.D.
Ina L. Konkin, M.D.

THE A.M.S.A. REPORT

REPORT ON THE STUDENT BUSINESS SESSION AND AMA CLINICAL CONVENTION, 399
Doug Outcalt

ARMA REPORTS, 401

FUTURE MEETINGS, 416



Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct non-therapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.

P·M·A
Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D. C. 20005

One contains aspirin. One doesn't.



Darvocet-N® 100

100 mg. propoxyphene napsylate and 650 mg. acetaminophen

Darvon® Compound-65

65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine

Lilly

Additional information available to the profession on request.
Eli Lilly and Company, Inc., Indianapolis, Indiana 46206

500341

Original Articles

INTRODUCTION

The faculty of the University of Arizona College of Medicine is pleased to sponsor this May, 1976, issue of *Arizona Medicine*. The sponsorship is more than an honorary designation by the Arizona Medical Association; it is really a reflection of the strong relationship that exists between Arizona physicians and their College of Medicine. This issue of *Arizona Medicine* is further evidence of this close association and attitude of cooperation between the College and the Arizona Medical Association. Hopefully, this will be the first of a long series of annual issues sponsored by the faculty and thus, the beginning of another medical tradition in Arizona.

Arizona Medicine epitomizes the high priority placed on continuing medical education (CME) by Arizona practicing physicians. Many pressures are being put upon the medical profession to document CME activities. States have passed legislation which relates relicensure to CME. Certain specialty boards require documentation of CME for recertification; many are already offering voluntary recertification. In some states, documentation of CME has been made a part of professional liability legislation. By whatever definition, continuing medical education is currently in ferment. While true of all viable fields of endeavor—"fermentation is, after all, at least evidence of life"—the field of continuing medical education seems to be buffetted by many winds of change. Nevertheless, when the winds die down and the dust settles, it will remain that:

> "The physician's continuing education, whether he is a scientist practicing in a medical school or a general practitioner practicing in some rural area, is largely a process within himself, one he pursues on his own. He may have some help from his professional colleagues, but most of his true learning—the part that sticks with him—is what he does for himself, by himself."
>
> George T. Harrell

The basic ingredient of education is the printed word. Documentation of learning by reading is difficult and is relegated to a lesser category by the American Medical Association and other accrediting organizations. The belief that sporadic and occasional "catch-up/cure-all" educational programs will answer our needs is at best naive. There are reasonable alternatives to the printed word available to the busy practitioner. Audio-tapes, video-tapes, and slide-sound programs are all legitimate methods if selected carefully and are especially valuable to the physician who "learns better and faster" by listening rather than reading. Nevertheless, the textbook and the journal article still should be the cornerstone of learning for most physicians.

The response of the faculty to an invitation to submit abstracts for this issue of *Arizona Medicine* was gratifying. Over sixty titles and abstracts were submitted, of which only eight appear in this issue. Selection of the articles was not easy and involved evaluation by nine faculty mem-

bers representing the major clinical departments. They were asked to score the abstracts on quality and appropriateness for the practicing physician. An affirmative answer by the reader to the question, "Will this article change the way I practice medicine?" was considered of utmost importance. Most papers were selected on the basis of their practical value to the reader.

The articles selected for this issue represent a wide spectrum of subjects. Each topic is relevant to the practice of all family physicians, most primary care physicians and many secondary and tertiary care physicians. The range of topics is broad and includes articles devoted to screening procedures, methods of evaluation and management, and suggestions for the rational use of therapeutic agents. Articles on screening embrace the following: methods for the early identification of patients with breast cancer, one of the leading causes of grief and death among women; suggestions intended to help unravel the complexity of endocrine and immunologic disorders; and those procedures designed to help ensure that children reach adulthood with the best chance for physicial, emotional and intellectual well-being. The reader is also directed to the now epidemic, but non life-threatening, arthropod infestation, scabies. New thoughts on old drugs and comments on controversies in therapeutics should provide the reader reason for reconsidering his therapeutic armamentarian. Finally, what physician, whether he be a family practitioner in Snowflake or a tertiary care subspecialist in the "big city," will not benefit by the last article of the issue, "Coping with the Disturbing Patient"?

I hope that this issue of *Arizona Medicine* will prove to be both informative and enjoyable. Thanks are due to the authors whose articles were chosen for this issue and those authors who submitted manuscripts for consideration. Finally, of course, special thanks to the Arizona Medical Association for inviting the faculty of the College of Medicine to sponsor this issue of *Arizona Medicine*.

George D. Comerci, M.D.
Associate Dean, Continuing Medicial Education and Outreach
Associate Professor Pediatrics and Family and Community Medicine
University of Arizona College of Medicine
Tucson, Arizona

May 1976

TABLE OF CONTENTS

SCREENING OF ASYMPTOMATIC WOMEN FOR BREAST CANCER, 349
Tim B. Hunter, M.D.
Arthur Present, M.D.
Irwin Freundlich, M.D.

LABORATORY SCREENING TESTS FOR COMMON ENDOCRIN DISEASES IN ADULTS, 353
C. A. Nugent, M.D.

RECURRENT INFECTIONS IN CHILDREN A PRACTICAL APPROACH, 359
James F. Jones, M.D.

CURRENT STATUS OF SCREENING PROCEDURES IN CHILD HEALTH CARE, 362
Michael S. Kappy, M.D.

SCABIES: PROBLEMS IN PHYSICIAN RECOGNITION, 366
Ronald C. Hansen, M.D.
Peter J. Lynch, M.D.

NEW ADVANCES IN DRUG THERAPY OF ASTHMA IN CHILDHOOD, 369
Hugh C. Thompson
Robert Strunk, M.D.
Victor Elsberry, B.S.

GOLD THERAPY IN JUVENILE RHEUMATOID ARTHRITIS ARTHRITIS, 373
Clifford Debenedetti, M.D.
Harold Tretbar, M.D.
James J. Corrigan, Jr., M.D.

COPING WITH THE DISTURBING PATIENT, 376
Russell D. Martin, M.D.



The advanced medical information system designed for people without computer experience.



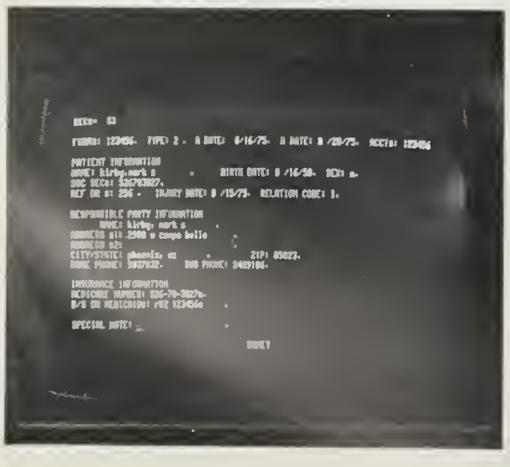
de lair data systems, inc.

No punched cards, punched tapes or computer specialists.

We've combined the most advanced computer equipment and techniques to create a medical information system that can be used by practically anyone who can read and type.

And, when you buy or lease our system, you don't have to create and store any punched cards or punched tapes. All data is entered through the CRT keyboard and stored directly on the system's magnetic disk (or disks).

To create patient master records, the operator simply enters data using the CRT keyboard. The CRT screen displays the data required for each patient, leaving a blank space to be filled in. Errors can be corrected by merely retyping over incorrect entries.



To change records, the operator simply displays the original patient data on the CRT screen and types new data over old entries.



Charges, payments and adjustments are also entered using the CRT keyboard and screen. Pricing can be automatic or manual, and any set of procedure and diagnostic codes can be used.

Retrieving patient information is accomplished instantly by simply keying in the patient's number or name. Data stored in the master record and all associated transactions are displayed on the CRT screen. Printed copies of the records can be made by directing the stored data to the system's high-speed printer.

Statements can be produced monthly, on a cycle basis or on demand. These can be either itemized or balance-forward statements. A number of different formats are available, too, including "Super Bill."



In most cases, a "Super Bill" can be submitted directly to insurance companies.

Medicare, Medicaid, Blue Shield and other insurance claims can be prepared automatically, either on demand or at periodic intervals.

A comprehensive delinquent account analysis can be produced on demand. This analysis can be tailored to any special needs and is

CRT visual display terminal and keyboard. One or more can be used, either adjacent to, or remote from computer.

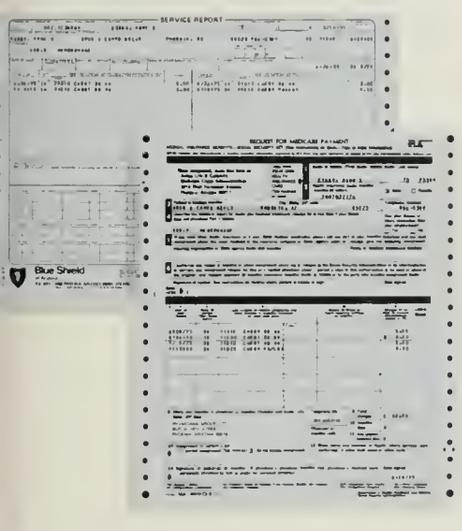


Central system with high-performance mini-computer and disk drive. Multiple disk drives can be used.

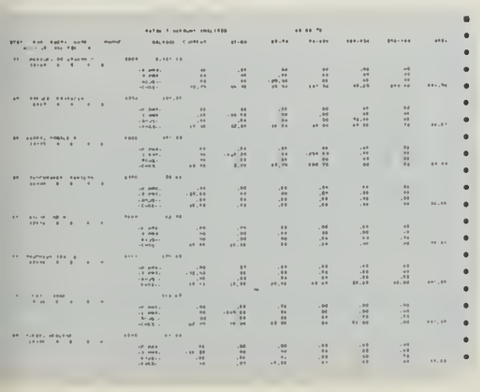


High-speed printer. Produces statements, financial reports, etc., as well as printed copies of patient data.



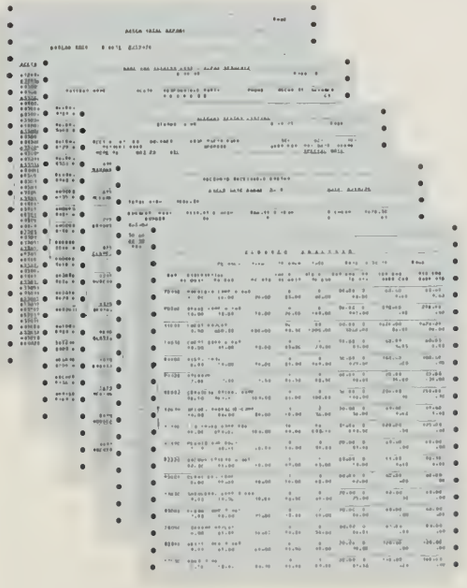


ased on a dynamic "credit status," hich is carried within each account id is recomputed each time a atement is produced. Delinquent otices with appropriate messages



are produced automatically. And messages can be altered as desired.

Financial and management reports are also generated by the system. Using a unique "Data Management System," additional special reports can be produced, even by persons without prior computer experience.



These management reports include: Aged Accounts Receivable, Daily Journals, Revenue and Service Analysis, Alphabetic Patient Lists and Special Reports.

Remote terminals can be used for any system function. If within 1,000 feet, remote terminals can be connected directly to the computer.



Terminals at greater distances are connected using telephone lines.

And, with the system's multi-programming capability, data entry, inquiry, statement runs and other tasks can be done simultaneously from a number of separate terminals.

de lair
data systems, inc.

A flexible system. A fixed price.

Ours is possibly the most flexible medical information system for sale or lease anywhere. And that's no accident. Instead of trying to make you conform to the system, it's our policy to make the system conform to you.

At DeLair Data Systems, it's also our policy to do the total job. *The system design. The system specification. The programming. The system installation. The training. The conversion assistance.*

But before we go to work, we give you a fixed price for everything. And we provide a guarantee in writing, based on your job specifications.

We think it's a better way to do business.

To learn more about leasing or buying our highly flexible medical information system, phone or write.

Specifications

Application Programs:

- Accounts Receivable
- Automatic Insurance Form Preparation
- Credit and Collection
- Revenue and Service Analysis
- Payroll
- Accounts Payable
- General Ledger
- Medical History
- Special Programs

System Functions:

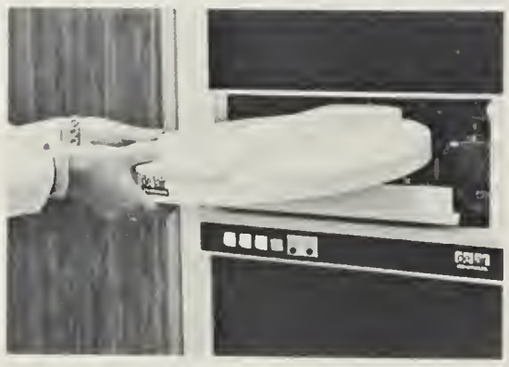
- Direct Data Entry
- Operator Guidance
- Simplified Error Correction
- Inquiry
- Real-Time
- Multi-Programming
- Data Management System
- Remote CRTs

Equipment:

Computer — A high-performance mini-computer with a 16 bit word length. A time-sharing operating system is used which supports FORTRAN IV, BASIC and XBASIC. The maximum memory capacity is 64,000 bytes (or characters) and operates at a speed of 1,000 nanoseconds.



Disk Storage — Each Disk Drive provides immediate access to 9.6 million data bytes (or characters).



The disk drive has a removable cartridge permitting infinite on-the-shelf storage. A maximum of 16 disk drives may be added to the system.

CRT Terminals — Either single or multiple CRT operations are possible. The CRT screen is 9″ x 7″ and contains 24 lines with 80 characters



per line. Directly connected CRTs are operated at 2400 BPS, while those connected over phone lines are operated at 1200 or 1800 BPS.



Printers — High-Speed Line Printers are available at 125, 250 and 600 lines per minute. Each printer has a 64 character font and is 132 columns wide.

Special Terminals — a variety of terminals which produce hard copy can be connected to the system.

de lair
data systems, inc.

6025-A North 16th Street, Phoenix, Arizona 85016 • 602 248-9106

Equipment pictured herein is subject to revision and update by DeLair Data Systems, Inc., and is also subject to availability from manufacturers.

SCREENING OF ASYMPTOMATIC WOMEN FOR BREAST CANCER

TIM B. HUNTER, M.D.
ARTHUR PRESENT, M.D.
IRWIN M. FREUNDLICH, M.D.

ABSTRACT

Breast cancer is a leading cause of death and disability in American women. Its early detection and treatment are of prime value in lessening mortality and morbidity. Mammography plays the principle role in current efforts to diagnose the disease in its early stages. During the initial 9 months of the Breast Cancer Detection Program in Tucson nineteen cancers were detected, fourteen of which were *not* palpable. Particular discussion is directed toward the use of percutaneous needle localization of non-palpable lesions prior to biopsy.

Breast cancer is the leading cause of mortality due to malignancy in the American female population. There are approximately 33,000 deaths annually and 88,000 new cases estimated for 1975.[1,2] Despite advances in surgical techniques, chemotherapy, radiation therapy and patient care, the mortality rate has not decreased over the past half century. Early detection is currently the most important factor in improving the mortality statistics.

If the average doubling time of a typical breast malignancy is assumed to be 30 days, a 2 cm lesion will have been present approximately eight years prior to diagnosis.[3] To grow from a 1 cm size to a 2 cm size requires an average growth period of eight months.[3] The assumption that a small tumor is an early tumor or that tumors have the same growth rate during their course does not necessarily follow. Tumors may grow at different rates at different stages in their life cycle and similar neoplasms in different patients may have markedly different growth patterns. A large galaxy of environmental and host factors may determine the clinical course of any given malignancy. Nevertheless, even though small tumors may not be "early" tumors, there is a definite relationship between the size of a lesion at the time of discovery and patient prognosis.[4] Small tumors are less likely to have metastasized, have fewer axillary nodes involved at the time of their discovery and, as expected, have a lower recurrence rate than larger ones.[3,4] Thus, small "favorable" lesions may be either truly "early" or "favorable" because of their slow growth and slowness to metastasize.[3]

Currently, much effort is being directed toward discovering the small, clinically occult breast lesion by mammography (xeromammography). Strax and his co-workers using conventional mammography have a large on-going screening program involving 31,000 women and an equal number of controls. These patients are from the Health Insurance Plan of Greater New York. Their initial results have shown a 1/3 reduction in mortality in those women whose cancers were detected by the mass screening program. In addition, of all the tumors detected (132), 1/3 (44) were clinically occult and detected *only* by mammography. Their five year follow-up showed only one death among the 44 occult cancers.[5] Approximately 2 1/2 years ago a national breast screening program was initiated in 27 centers across the United States sponsored by the American Cancer Society and the National Cancer Institute.[6] The basic plan is to screen 5,000 asymptomatic women between the ages of 35 and 74 at each center the first year, 5,000 more the second year, and then to follow these 10,000 women with repeat yearly exams for five years.[6]

The center at the University of Arizona is a community project with facilities for xeromammography, thermography and physical examination by a trained nurse practitioner. Xeromammography offers several technical advantages over routine film mammography but either study could be employed.[7] Each of these examinations are interpreted independently of the others by a radiologist in private practice or from the University with an expertise in mammography. A final summary of the patient's case is determined by one of the physicians with knowledge of the results of all three modalities. The physician may recommend that the patient a) be followed in a routine manner (one year), b) have a repeat study for closer follow-up in three or six months or c) is referred to her private physician for evaluation of a suspicious area in the breast. Approximately 50 patients are examined daily. In addition to the x-ray technologists, project coordinator, data administrator, nurse examiners and physicians there are 125

From: Breast Cancer Detection Program, Division of Diagnostic Radiology, Depart. of Radiology, University of Arizona College of Medicine, Tucson, Arizona. Dr. Hunter, Assistant Professor of Radiology, Dr. Present, Professor of Radiology, Dr. Freundlich, Professor and Chief of Division of Diagnostic Radiology. Reprint requests to TBH, Department of Radiology, Arizona Medical Center, Tucson, Arizona 85724.



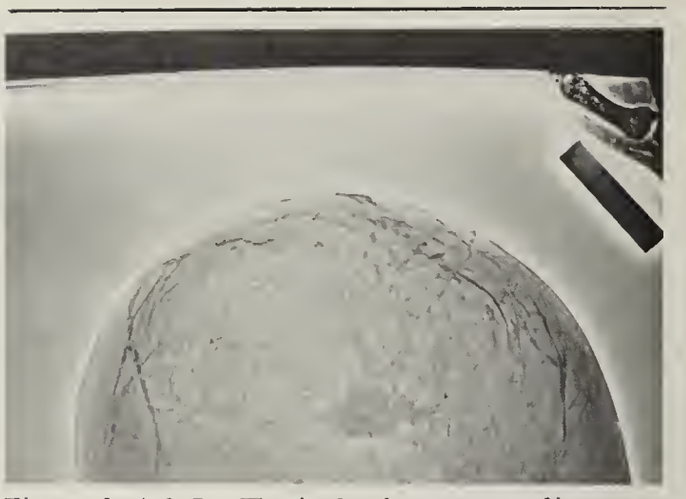


Figure 1: A & B Typical breast malignancy containing a small cluster of fine calcifications. Note the localized area of subcutaneous edema (closed arrow) and the dilated duct (open arrow).



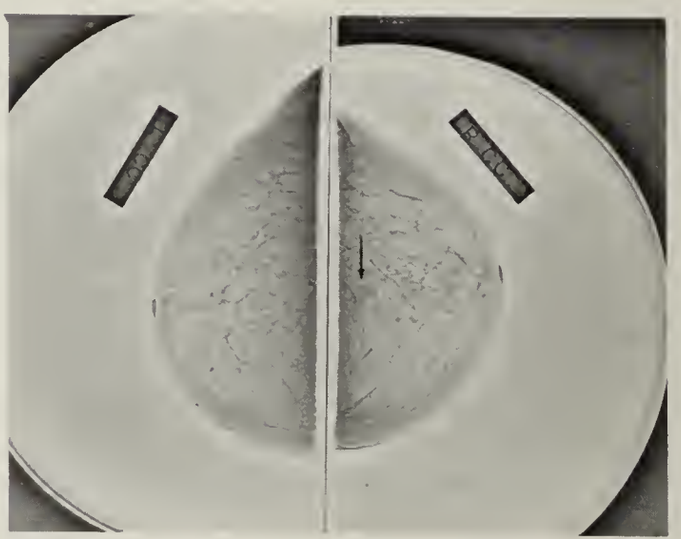


Figure 2: A & B Small, deep, non-palpable carcinoma in the right breast (arrow).

volunteers without whose help the center could not operate.

Table I shows the latest available statistics on the national as well as on the local level. As of July 1, 1975, 165,000 females were examined in 27 centers and 484 carcinomas found. 92.3% of these were discovered by mammography (xeromammography), 57.7% by physical examination and 43.8% by thermography.[8] These statistics clearly indicate that a large percentage of the carcinomas found were *not palpable*. In the Tucson center as of February 11th of 1976, 5,570 patients have been examined and 184 cases were suspicious of malignancy. Biopsy was carried out in only 119 instances. The results of 84 of these biopsies are known and 19 pathologically proven carcinomas were found. Thirty-five cases have been biopsied but not as yet reported and 66 suspicious cases have, to our knowledge, not been biopsied. We know we must biopsy from 4 to 5 benign breasts for every malignancy discovered. This has been our past experience and is the expectation nationally as well.[9] Typical cases are shown in Figures 1 and 2.

It is clear that a large percentage, ranging from 35-75%, of the malignancies detected are not

TUCSON

Date	Patients Examined	Biopsies Recommended	Biopsies Performed	Reported Cases	Cancers	Discovered Mammography	Discovered By Physical Examination
2 11 76	5570	185	119	84	19	19 (100%)	5 (26.4%)

NATIONAL

Date	Examined	Cancers	Discovered by Mammography	Discovered by Physical Examination
6 30 75	165,000	484	447 (92.3%)	279 (57.7%)

palpable, especially in younger women.[5,6,10] Blind biopsy of a specific localized area of the breast is difficult particularly in large breasts and a lesion may be missed surgically or by the pathologist. Frequently, these nonpalpable lesions are identified by small cluster calcification (Figure 3). In a recent series by Wolfe, 30.1% of malignancies were occult. 37.4% of these occult lesions were identified by their calcification alone.[10] While breast calcifications are not necessarily diagnostic of malignancy and many types of benign calcium are seen, the incidence of carcinoma, especially intraductal and lobular carcinoma, is increased if calcium of a certain type is present.[11] The problem therefore, involves the isolation and excision of small, nonpalpable masses or areas of calcification detected by mammography without removing a large portion of the breast.

A simple method for localization of a suspicious nonpalpable area of the breast prior to biopsy is the needle localization technique.[11] At the Arizona Medical Center or the Tucson Medical Center the patient is brought to the Radiology Department an hour prior to her scheduled surgery. Premedication must be limited so that the patient will be able to cooperate. A small piece of wire or solder is then used to measure around the curve from the nipple to the lesion on the craniocauded view of the original mammogram. This piece of solder or wire is then placed next to the breast on the platform of the mammography unit and the position of the lesion estimated from the medial-lateral view as well. The depth of the lesion is also measured from the original mammogram. After the skin is

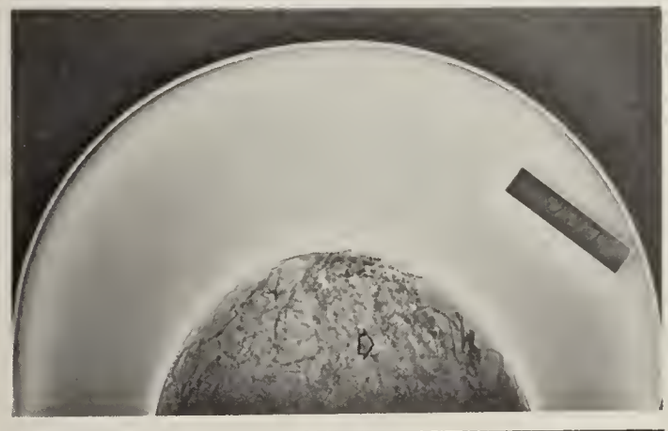




Figure 3: A & B The large cluster of calcifications is the only sign of malignancy (arrows).



Figure 4: A & B Same patient as Figure 3 with a needle placed in the breast for localization of the non-palpable carcinoma prior to biopsy.

anesthetized an 18 or 19 gauge needle is inserted in an attempt to place the needle tip within or close to the lesion. The needle is then taped securely into place and radiographs made in both positions. If the needle tip is within or close to the lesion, the patient is then transferred directly to the operating room. If the placement is poor the needle is withdrawn and repositioned. (Figures 3 and 4). If the needle tip is within 1 cm of the suspected area, it is close enough. An ordinary needle usually suffices but in a large breast with a deep lesion, a longer needle commonly used for lumbar puncture is recommended. The radiographs are discussed with the surgeon prior to biopsy so that he fully appreciates the relationship of the lesion with respect to the needle tip. After the biopsy the specimen is radiographed to make certain that the suspicious lesion has been removed (Figure 5). The radiologist then can identify the exact position of the lesion for the pathologist.[7-11] The value of needle placement became obvious when two patients, who had had negative blind biopsies, were found to have carcinoma on rebiopsy after routine three month re-examination at the screening center.

Generally speaking it costs $35.00 per patient for a complete breast screening with the expectation this can be reduced to about $25.00.[1] The discovery of a single occult carcinomas costs $23,000. It is expected that 80% of these women will be alive and free of disease ten years later.[1] This contrasts with the $100,000 figure Blue Shield and Blue Cross estimate as the cost for medical care for women with progressive metastatic disease who survive 4 1/2 years from the time of initial discovery.[1]





Figure 5: Radiograph of a breast specimen demonstrating a small cluster of calcifications.

For the foreseeable future breast carcinoma will continue to be a prime cause of mortality and disfigurement in women. Newer screening methods are beginning to offer hope that these malignancies can be found in "earlier" stages and that the overall cure rate can be improved. Initial studies indicate that mammography coupled with other modalities will definitely lower the death rate and morbidity in those populations screened. The application of this technique to the entire population raises serious questions concerning feasibility, economic cost and radiation burden to the population but a reduction in the mortality rate from breast cancer can be achieved.

REFERENCES

1. Kalisher L, Schaffer D, Xeromammography in early detection of breast cancer. JAMA 234:60-63, 1975.
2. Silverberg E, Holleb AI, Major trends in cancer: 25 years of survey. Ca 25:2-21, 1975.
3. Gardner B, Breast cancer revisited. JAMA 232:742-743, 1975.
4. Fisher B, Slack NH, Bross IDJ, et al. The size of breast cancer and prognosis. Cancer 24:1071-1080, 1969.
5. Strax P, Venet L, Shapiro S, The value of mammography in reduction of mortality from breast cancer in mass screening. Amer J Roent 117:686-690, 1973.
6. Medical News. JAMA 231:354, 1974.
7. Wolfe JN, Xeroradiography of the breast. Springfield, Ill., Charles C. Thomas, 1972.
8. Pomerance W, Results of the NCI ACS breast demonstration project. Presented at the Amer Therm Soc Meeting, September 1975.
9. DeLuca JT, A statistical comparison study of patients undergoing breast biopsy at a community hospital over a 16-year period. Radiology 112:315-318, 1974.
10. Wolfe JN, Analysis of 462 breast carcinomas. Amer J Roent 121: 846-853, 1974.
11. Threatt B, Appelman H, Dow R, O'Rourke T, Percutaneous needle localization of clustered mammary microcalcifications prior to biopsy. Amer J Roent 121:839-842, 1974.

LABORATORY SCREENING TESTS FOR COMMON ENDOCRINE DISEASES IN ADULTS

C.A. NUGENT, M.D.

Physicians examining patients suspected of having endocrine diseases use the laboratory to clarify clinical impressions. The screening tests that they select for this purpose should be accurate, convenient, and inexpensive. In this article we will review laboratory screening tests for patients in whom hyperthyroidism, hypothyroidism or Cushing's syndrome is suspected and for patients who say that they have hypoglycemia.

HYPERTHYROIDISM OR HYPOTHYROIDISM

The most direct laboratory approach to screening for hyper- or hypo-thyroidism would seem to be to measure the concentration of thyroid hormones in blood. Humans have only two recognized physiologically active thyroid hormones, triiodothyronine or T_3, and thyroxin or T_4.[1] Radioimmunoassay of T_3 is valuable for the investigation of certain patients with thyroid problems but at present is not usually used as a screening test for thyroid dysfunction. T_3 determinations often cannot be done in local laboratories and both high and low plasma T_3 levels can be found in conditions other than hyper- or hypothyroidism. Determination of serum T_4 concentration by itself is not a very satisfactory screening test for hyper- or hypothyroidism because of the frequent occurrence of abnormalities of proteins binding thyroxin in serum. About 99.95% of T_4 in serum is protein-bound. Alterations in the concentration of serum proteins binding T_4 cause comparable alterations in serum T_4 concentration.[1] Many individuals investigated for thyroid dysfunction are taking estrogens, are pregnant, or are sick.[1] Pregnant women or patients taking estrogens have increased synthesis of a wide variety of proteins, one of which is thyroxin-binding protein. This tends to elevate serum T_4 concentration (Table 1). Many illnesses cause a non-specific disease in proteins binding thyroxin and a lowering of serum T_4 concentrations (Table 1). However,

Table 1
Screening Tests for Thyroid Function*

	T_4	RT_3U	T_4 RT_3 index
Normal	N	N	N
Pregnant	N or ↑	N or ↓	N
Estrogens	N or ↑	N or ↓	N
Sick	N or ↓	N or ↑	N

*T_4 = Serum thyroxin concentration. RT_3U = Resin T_3 uptake. T_4RT_3 index = T_4 X normalized value of the RT_3U. Normalized value of RT_3U = RT_3U for patient ÷ mean normal RT_3U. N = normal.

From: Section of Endocrinology, Department of Internal Medicine, University of Arizona College of Medicine, Tucson, Arizona. (Dr. Nugent, Professor of Medicine and Head of Section of Endocrinology.) Reprint requests to CAN, Department of Internal Medicine, Arizona Medicial Center, Tucson, Arizona 85724

there is a very convenient and inexpensive method to correct for these distortions, namely to determine the resin T_3 uptake (RT_3U) in addition to serum T_4.

The RT_3U is determined by adding to a diluted sample of the patient's serum a small amount of radioactive labelled T_3 plus a resin that binds thyroid hormones. When serum proteins binding thyroid hormones are high, a relatively small proportion of the labelled T_3 is bound by the resin, i.e. the RT_3U is low. Therefore, sera from patients with estrogen-induced increases in thyroid hormone binding proteins with high T_4's tend to have low RT_3U's. The opposite is true in many illnesses which tend to have a drecrease in serum proteins binding thyroid hormones reflected by low serum T_4's and high RT_3U values. In other words, alterations in serum T_4 induced by changes in thyroxin-binding proteins due to pregnancy, estrogen administration, or illness tend to have RT_3 uptake values that move in a direction opposite to that of T_4. Multiplication of the T_4 concentration by a normalized value for the RT_3U produces a corrected index, the T_4RT_3 index (Table 1). In some laboratories, other terms,or example T_7 or free T_4 index, are used to express a value for the T_4 concentration corrected for the RT_3U. The exact term used depends on the laboratory reporting the values. However, regardless of what term is applied, calculation of the T_4RT_3 index, T_7, or free T_4 index based on detmination of T_4 and resin T_3 uptake is the most accurate, convenient, and inexpensive way to screen for hyper- or hypothyroidism at present.

CUSHING'S SYNDROME

A major feature of Cushing's syndrome, namely central obesity, together with some of the less common accompaniments such as red face, skin striae, and hirsutism, are so common in our population that Cushing's syndrome, while a rare disorder, is a frequently suspected diagnosis.[2] Because this diagnosis is so commonly suspected, it is important to select a suitable screening test for identifying those patients who need further investigation.

Cushing's syndrome is attributable to exposure of tissues to excessive amounts of glucocorticoids. The glucocorticoids could be from exogenous or endogenous sources. It is usually easy to identify patients who are taking exogenous glucocorticoids. Cortisol is the endogenous glucocorticoid responsible for Cushing's syndrome. The most direct approach to identifying patients who are over-producing cortisol might seem to be the measurement of the concentration of cortisol in plasma or measurement of the rate of excretion of its metabolities in 24-hour urine specimens. Unfortunately, these direct approaches are not accurate[3] (Fig. 1). Cortisol in normal subjects is produced in response to brief spurts of ACTH produced by the pituitary.[4] This results in wide variations in plasma cortisol throughout the day and night and therefore a very wide range of normal concentration which overlaps with that found in Cushing's syndrome (Fig. 1). Determination of plasma cortisol concentration at 20-minute intervals throughout a major portion of the 24 hours would better separate patients with over-production of cortisol from normal subjects but it would be troublesome and expensive. If the attempt to assess the diurnal variation of plasma cortisol is done using only 4 to 6 plasma cortisol determinations collected during a 24-hour period, it is no great improvement over a single cortisol determination in the diagnosis of Cushing's syndrome[3] (Fig. 1) and is also inconvenient and expensive.

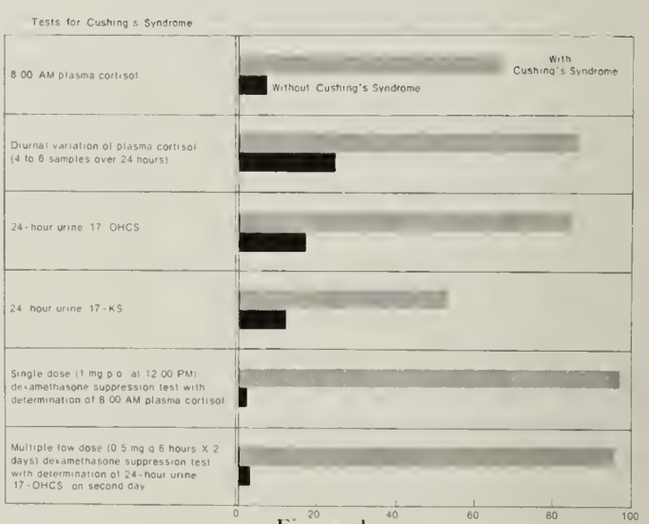


Figure 1.
Percent of evaluation of tests results above the upper limits of normal.[R]

Determination of the 24-hour urinary excretion of 17-hydroxycorticosteroids, a group of steroids which includes the major metabolities of

cortisol, is also of limited value as a screening test. Urinary 17-ketosteroids for this purpose are even less accurate.[3] Some investigators have found that determination of free cortisol in 24-hour urine collections is an accurate screening test for Cushing's syndrome. However, the determination often cannot be done in local labortories.

The single dose dexamethasone suppression test with collection of a single plasma specimen for cortisol determination is an accurate, convenient, and relatively inexpensive test to identify patients with Cushing's syndrome.[5] One mg of dexamethasone is given orally at 12:00 midnight and blood is obtained for determination of plasma cortisol concentration the following 8:00 AM. The upper limit of normal is 10μg/100 ml and most normal subjects will have values less that 5μ g/100 ml. Patients with Cushing's syndrome are expected to have plasma cortisol concentrations greater than 10μg/100 ml. Acutely ill patients, patients taking estrogens, and severely depressed patients must be excluded from the examination and the test is more satisfactory in outpatients than in hospitalized patients. Another accurate, convenient, and inexpensive test for screening for Cushing's syndrome is the multiple low dose dexamethasone suppression test with determination of urine 17-hydroxycorticosteroids.[3] Dexamethasone, 0.5 mg, is given orally every 6 hours for two days. Urine collected from normal subjects during the second day of dexamethasone administration should contain less than 4 mg of 17-hydroxycorticosteroids. Higher values are expected in patients with Cushing's syndrome.

THE COMPLAINT OF HYPOGLYCEMIA

Investigation of patients who give a history of signs and symptoms of hypoglycemia.

Patients with hypoglycemia[6] can have autonomic signs and symptoms (sweating, tremor, anxiety, tachycardia, malaise) or cerebral symptoms (headache, blurred vision, and confusion progressing to coma and convulsions). It is helpful to separate patients into those with hypoglycemia developing on fasting and those in whom hypoglycemia follows a carbohydrate load (reactive hypoglycemia). Fasting hypoglycemia in adults is often associated with a serious disease. Reactive hypoglycemia in adults is usually a benign disorder. If the signs and symptoms of hypoglycemia can be induced by fasting, if chemical hypoglycemia can be demonstrated on blood sugars drawn at the time the patient has symptoms, and if the patient is not taking hypoglycemic drugs, starving, or taking alcohol, the patient deserves further investigation for the serious organic diseases which are usually responsible for fasting hypoglycemia. These diseases include pituitary insufficiency, insulin-secreting pancreatic tumors, certain large extrapancreatic tumors, liver disease, and adrenal insufficiency. On the other hand, if signs and symptoms of hypoglycemia occur following meals and can be shown to be associated with low blood sugars as determined in a laboratory (reactive hypoglycemia), dietary restriction of carbohydrates to induce glucose intolerance, reassurance, and frequent feedings are sometimes effective in management.

Investigation of patients who complain of hypoglycemia but have only a questionable history of signs and symptoms of hypoglycemia.

As indicated above, hypoglycemia is caused by a variety of organic diseases, drugs, and functional disorders. However, none of these are the usual cause of symptoms in patients complaining of hypoglycemia. Most of the patients use the term hypoglycemia to describe anxiety, depression, fatigue, allergies, and behavior problems.[7]

The misinformation patients have about hypoglycemia is sometimes clarified by asking them to tell you about their sources of information on the disorder. Often they have read unscientific articles claiming that hypoglycemia is a frequent basis for psychosomatic illness, under-achieving high IQ children, miscarriages, alcoholism, drug addiction, deliquency, neuropsychiatric disorders, ulcer-like digestive difficulties, and increased susceptibility to upper respiratory infections.[7] They often bring to physicians offices records of glucose tolerance tests incorrectly interpreting hypoglycemia. One book sometimes cited by my patients defines hypoglycemia as a fall in blood sugar of 20 mg/100 ml or more below the initial fasting blood sugar concentration during a 5-hour

glucose tolerance test.[8] However, Madison[9] has pointed out that one-third of normal subjects not complaining of symptoms of hypoglycemia will at one time or another during a 5-hour glucose tolerance test have at least one blood sugar more than 20 mg/100 ml below the initial basal fasting level.

If you are uncertain after review of the patient's history, physical examination, and past laboratory data whether or not signs or symptoms of hypoglycemia are present, or if you think hypoglycemia is present and you want laboratory confirmation, care must be taken in performing laboratory tests.

If fasting hypoglycemia is suspected and you wish to investigate this by determining plasma glucose, you should realize that fasting normal subjects, particularly women, can sometimes rapidly develop surprising degrees of hypoglycemia.[10] A 14-hour fast gives mean plasma glucose values of about 66 and 83 mg/100 ml in women and men, respectively. These data are estimates made by interpolation of the data of Merimee and Tyson[10] who used different intervals for sampling their subjects. Normal women fasting for 24 hours have mean plasma glucose concentrations as low as 34.5 mg/100 ml. Normal men are considerably more resistant to fasting. Even after a 72-hour fast, the lower limit of normal for men was 50.3 mg/100 ml. If it is decided to investigate a patient for fasting hypoglycemia, it would seem reasonable not to prolong the fast beyond 24 hours in women and 72 hours in men. Again, the attempt should be made to search for signs and symptoms of hypoglycemia to correlate with chemical findings during the fast.

If you investigate a patient for reactive hypoglycemia with an oral glucose tolerance test, you should monitor the patient for signs and symptoms of hypoglycemia each time blood samples are obtained, examine the relief of these signs and symptoms by ingestion of carbohydrates or injection of glucose, and later correlate the clinical observations with the blood glucose values. The presence of signs and symptoms of hypoglycemia in association with chemical hypoglycemia, their absence during periods of normoglycemia, and their relief with glucose would substantiate the clinical suspicion.

Investigation of patients who complain of hypoglycemia but give no history of signs or symptoms of hypoglycemia.

It is important to avoid performing a glucose tolerance test in investigating individuals complaining of hypoglycemia without signs or symptoms of the disorder. Chemical hypoglycemia during glucose tolerance tests is very common in normal subjects. During 3-hour oral glucose tolerance tests, Madison found that 17% of normal subjects had at least one blood sugar below 50 mg/100 ml and it was below 40 mg/100 ml in 4% of the subjects. With such low blood sugars occurring so frequently in response to oral glucose tolerance tests in normal individuals not complaining of hypoglycemia, it would not be reasonable to identify patients as hypoglycemic just on the basis of a blood sugar of 50 or even 40 mg/100 ml during a 5-hour glucose tolerance test.

As described earlier, fasting also can induce strikingly low plasma glucose levels in normal subjects, particularly women.

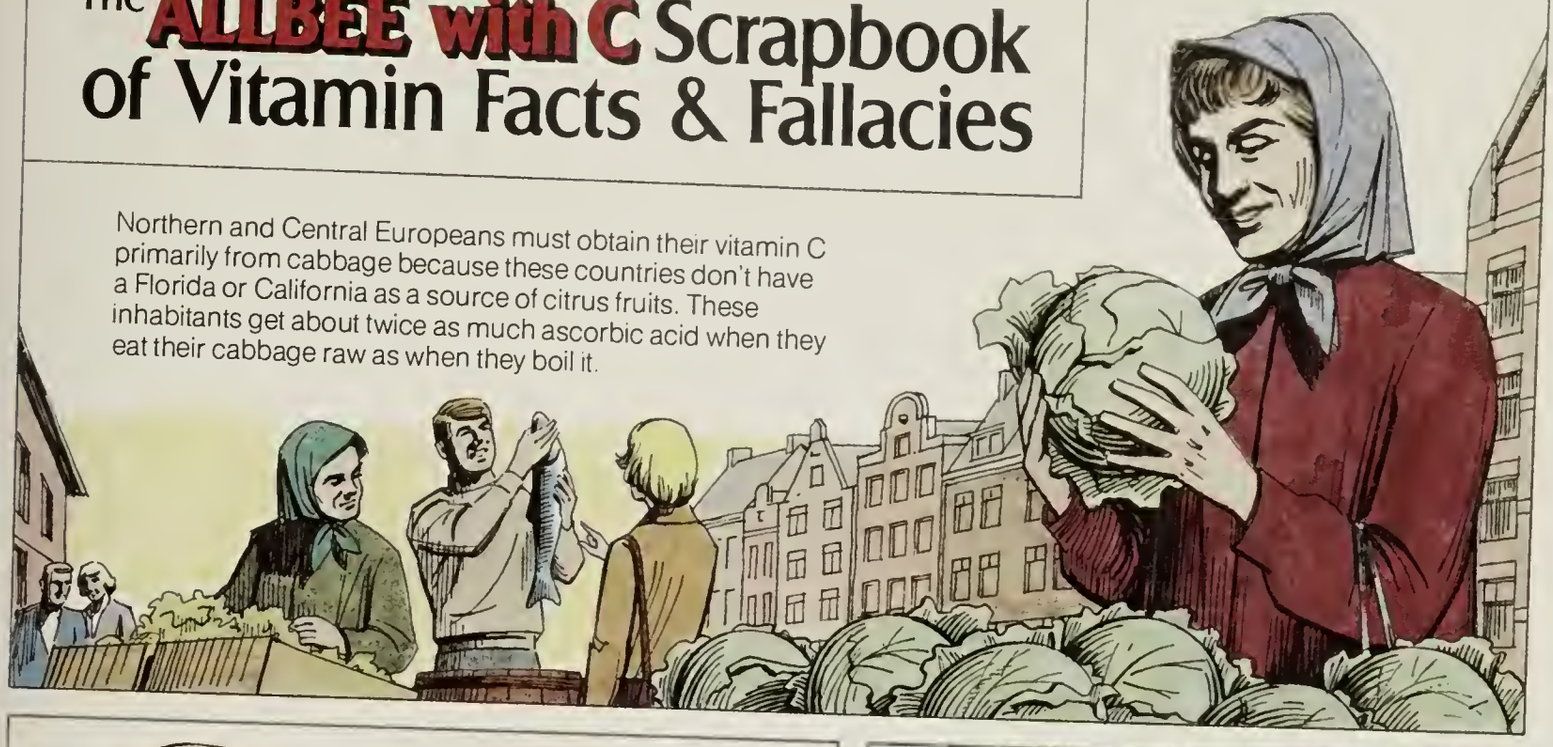
To investigate the patient complaining of hypoglycemia without signs or symptoms of the disorder, we usually obtain blood samples for plasma glucose during several of the episodes the patient believes are attributable to hypoglycemia. When normal, these plasma glucose values usually are adequate to convince the physician and usually the patient that the complaints are not caused by hypoglycemia. When the plasma glucose values are abnormally low, further investigations must be performed to identify the specific cause.

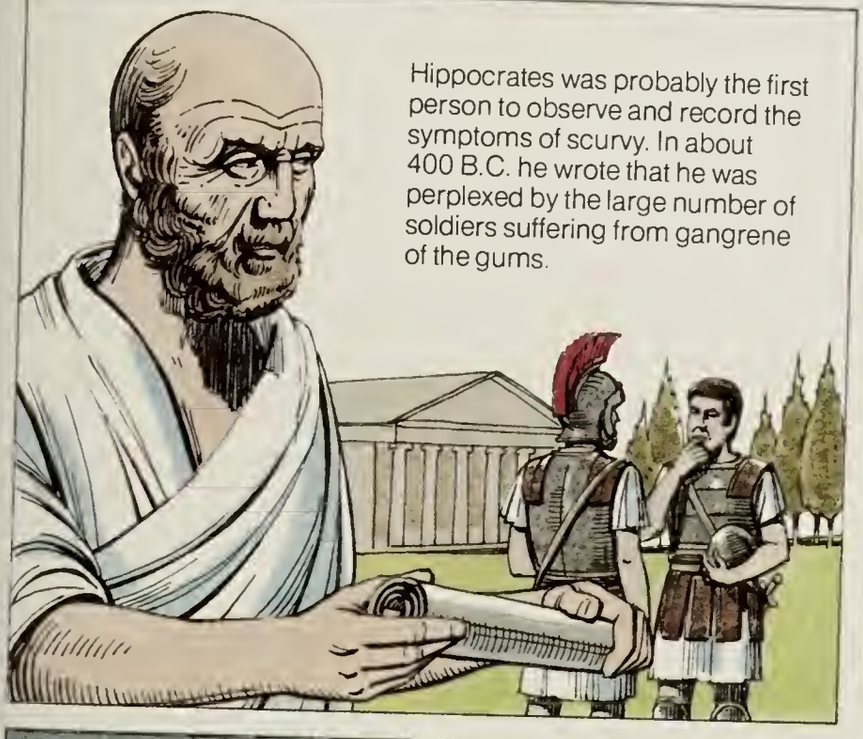
REFERENCES

1. Werner SC, Ingbar SH (Ed), The thyroid, 3rd edition, New York, Harper and Row Publisher, Inc., 1971.
2. Nugent CA, Nichols T, Cushing's syndrome. Current Diagnosis 3:738-743, 1970.
3. Nichols T, Nugent CA, Tyler FH, Steroid laboratory tests in the diagnosis of Cushing's syndrome. Am J Med 45:116-128, 1968.
4. Gallagher TF, Yoshida K, Roffwarg HD, et al, ACTH and cortisol secretory patterns in man. J Clin Endocrinol 36:1058-1068, 1973.
5. Nugent CA, Nichols T, Tyler FH, Diagnosis of Cushing's syndrome. Arch Int Med 116:172-176, 1965.
6. Conn JW, Pek S, On spontaneous hypoglycemia. Current Concepts, Scope Monograph No. 1, Kalamazoo, Michigan, The Upjohn Company, 1970.
7. Editorial, Statement on hypoglycemia. JAMA 223:682, 1973.
8. Frederick C, Goodman H, Low blood sugar and you. New York Constellation International, 1969.
9. Madison LL, The post-prandial hypoglycemias. The epidemic of functional hypoglycemia and the two-headed monster. Medical Grand Rounds, Southwestern Medical School, Dallas, Texas, April 15, 1971.
10. Merimee TJ, Tyson JE, Stabilization of plasma glucose during fasting. NEJM 291:1275-1278, 1974.

The ALLBEE® with C Scrapbook of Vitamin Facts & Fallacies

Northern and Central Europeans must obtain their vitamin C primarily from cabbage because these countries don't have a Florida or California as a source of citrus fruits. These inhabitants get about twice as much ascorbic acid when they eat their cabbage raw as when they boil it.





Hippocrates was probably the first person to observe and record the symptoms of scurvy. In about 400 B.C. he wrote that he was perplexed by the large number of soldiers suffering from gangrene of the gums.



People in more primitive, less commercialized societies often eat better balanced diets than affluent Americans. These natives instinctively choose nourishing foods because their bodies tell them what they need. The dietary habits of Americans are often influenced by television commercials that appeal to our wants instead of our needs.



Vitamins are so potent that a day's supply weighs only 1/237th of an ounce!

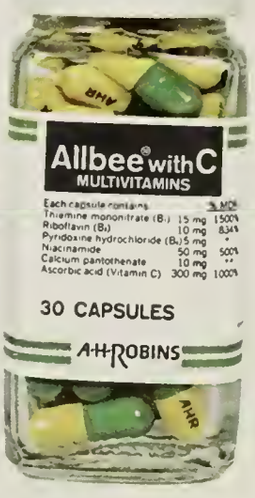


Look for the monogram "AHR" on every Allbee with C capsule. It is your assurance that this is the original and genuine product and not an imitation.

Available on your prescription or recommendation

ALLBEE® with C

High Potency B-Complex and Vitamin C Formula



A.H. Robins Company, Richmond, Va. 23220 A·H·ROBINS



Spasm reactor?

Donnatal®!

	each tablet, capsule or 5 cc teaspoonful of elixir (23% alcohol)	each Donnatal No. 2	each Extentab
hyoscyamine sulfate	0.1037 mg.	0.1037 mg.	0.3111 mg.
atropine sulfate	0.0194 mg.	0.0194 mg.	0.0582 mg
hyoscine hydrobromide	0.0065 mg	0.0065 mg.	0.0195 mg.
phenobarbital (warning may be habit forming)	(¼ gr.) 16.2 mg	(½ gr.) 32.4 mg.	(¾ gr.) 48.6 mg.

Brief summary. Adverse Reactions: Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Contraindications: Glaucoma; renal or hepatic disease; obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); or hypersensitivity to any of the ingredients.

A·H·ROBINS A H Robins Company Richmond Virginia 23220

RECURRENT INFECTIONS IN CHILDREN
A PRACTICAL APPROACH

JAMES F. JONES, M.D.

ABSTRACT

Children with recurrent infections, particularly those of the respiratory tract, ears, and skin, are quite common in clinical practice. Questions arise as to which of these children are immunologically normal, and who may have an underlying defect in host defenses. There are certain signs and symptom-complexes which suggest the possibility of such defects. The nature of their illnesses and the age at which they occur, often provide clues of immune defects. Screening evaluation by laboratory tests may be performed in the office or a local laboratory. If it suggests abnormalities, or if the patient's problems persist, referral to a regional center is indicated.

INTRODUCTION

Children with recurrent infections are a cause of great concern to parents and physicians. Table I depicts the medical history of such a child.

Many underlying conditions may be responsible for her clinical course, including allergy, anatomic problems, genetic-metabolic disorders, or she may simply have a large number of chance infections without any discernible underlying cause. The immune deficiency states (IDS) comprise another possible explanation for recurrent infections in children. Recognition of children who may have such defects in immune function and distinguishing them from normal children is the focus of this report.

The signs, symptoms, physical findings, and characteristic illnesses of children with IDS will be presented in terms of relative frequency and then will be considered in relation to age. Suggestions are offered which may assist in identification of these children.

Throughout the report reference will be made to the child's problems outlined in Table I. No attempt will be made to catalog all known immunodeficiency states, as this information is available in several reviews and textbooks.[1-9] Rather, an approach to diagnostic thinking will be presented.

TABLE I
SYNOPSIS OF HEALTH RECORD OF A FEMALE CHILD — N.U. DATE OF BIRTH 25 FEBRUARY, 1974

AGE	EVALUATION
Newborn period	normal
8 months	fever, roseola
9 months	non-specific URI
11 months	check-up - normal
16 months	diarrhea, unknown etiol. with prolonged course, possible milk intolerance
17 months	fever, URI, otitis media; diarrhea resolved
18 months	fever, URI; conjunctivitis, otitis media, lingular pneumonia
19 months	problems resolving
20 months	fever, otitis media
22 months	wheezing, lingular pneumonia; normal exam and growth

MANIFESTATIONS OF TRUE IMMUNODEFICIENCY

There are several general characteristics of such children's illnesses. Their illnesses often include: 1) recurrent bacterial infections, 2) recurrent respiratory tract infections, 3) persistent diarrhea, and 4) failure to thrive.

Their infections are usually: 1) frequent, 2) severe, 3) of long duration, and 4) caused by either common pyogenic organisms or organisms of low pathogenecity (opportunistic organisms).

Common specific findings in children with true IDS include: 1) chronic otitis media—often with performation and chronic purulent discharge, 2) bronchiectasis and/or chronic pneumonitis, 3) chronic conjunctivitis, 4) bacterial skin infection, 5) cervical adenitis and abscesses, 6) mal-absorption syndrome, and 7) absent or decreased lymph nodes.

Less frequently observed findings are: 1) persistent thrush, 2) adverse uncommon reactions to vaccines, 3) skin rashes and alopecia, 4) severe viral diseases, i.e. measles pneumonia, 5) arthritis, 6) chronic hepatitis, 7) lymphadenopathy and/or hepatosplenomegaly, and 8) hematologic abnormalities (anemias, thrombocytopenias, leukopenias).

From: Section of Infectious Disease and Virology, Depart. of Pediatrics, University of Arizona College of Medicine, Tucson, Arizona. (Dr. Jones, Lecturer in Pediatrics.) Reprint requests to JFJ, Department of Pediatrics, Arizona Medical Center, Tucson, Arizona 85724.

As presented in Table I, N.U. fits many of these characteristics. She had repeated upper and lower respiratory tract infections. She also had a protracted diarrheal illness. Her infections occurred frequently, and her parents were certain she "had something seriously wrong with her." Upon closer examination, her course reveals several important points that are inconsistent with the diagnosis of immunodeficiency.

She had no documented bacterial infections. Even though her problems were recurrent, resolution occurred in a reasonable period of time. Her infections were common ones and often involved subjective diagnostic judgements. Lastly, her growth and development were normal, despite the apparent chronicity and persistence of her problems.

Age-Specific Factors in the Diagnosis of Immunodeficiency

Immunodeficiencies may be congenital or acquired. Specific immunodeficiencies may appear during certain periods or at any time during the child's life. Clinical findings characteristic of specific age periods are:

AGE PERIODS:

I. First three months of life
 - A. Children born prematurely
 - B. Skin lesions
 1. Inguinal pustules
 2. Generalized candidiasis
 3. Generalized eczema or seborrhea with alopecia
 - C. Associated clinical defects
 1. Hypocalcemic tetany
 2. Hypothyroidism
 3. Chromosomal aberrations
 - D. Chronic diarrhea or malabsorption
 - E. Failure to thrive
 - F. Hepatosplenomegaly
 - G. Lymphadenitis
 - H. Perianal abscesses

II. Three to eighteen months
(The following problems may be seen at any time during this period, but particularly during intervals listed below.)
 - A. Three to six months
 1. Systemic and local candidiasis
 2. Recurrent otitis media
 3. Recurrent pulmonary infections
 4. Sepsis
 - B. After six months
 1. Recurrent skin infection
 2. Recurrent pulmonary infections
 3. CNS infections

 (These infections are usually due to Staphylococcus aureus, Streptococcus pneumoniae, Hemophilus influenza, or other bacteria.)
 - C. Entire three to eighteen month period
 1. Eczema - may be accompanied by thrombocytopenia
 2. Uncommon reactions to immunizations

III. Eighteen months throughout childhood
 - A. Generalized reactions to immunizations
 1. BCG
 2. Vaccinia
 - B. Generalized reactions to exanthematous diseases (i.e. ecthyma gangrenosum, progressive pneumonia, etc.)
 1. Varicella
 2. Herpes simplex
 3. Meningococcemia
 4. Measles
 - C. Hemalytic-uremic syndrome
 - D. Intravascular coagulation
 - E. Recurrent respiratory tract or skin infections
 - F. Malabsorption syndromes
 - G. Connective tissue disorders
 - H. Hypersplenism
 - I. Hemolytic anemia
 - J. Malignancy

Some of the reasons for this order of appearance are related to maturation of immune responses, loss of protective maternal antibody, immunization schedules, and exposure to infectious agents. For example, infants born prematurely do not receive a full complement of maternal antibody because of inadequate active transport of IgG by an immature placenta. Table II lists various categories of the immunodeficiency states which classically appear in the age groups presented in the text.

Comparison of the findings and course of the patient, N.U., with the age-related findings reveals several pertinent facts.

She did not have problems during the first six months of life. It is during this time period that children with major defects in phagocyte, complement, and/or cell-mediated immune function often begin having serious illnesses.

Secondly, she had no unusual reactions to illnesses or immunizations during a time of high exposure.

TABLE II
AGE OF CLASSICAL PRESENTATION OF IDS

A. Lack of transfer of maternal antibody
B. Neutrophil defects, chemotaxis defects, complement deficiency
C. Defects of cell-mediated immunity (CMI) in DiGeorge's syndrome, chromosome abnormalities
D. Graft vs. host reactions

II. THREE TO EIGHTEEN MONTHS
A. 3-6 months - CMI defects, combined immunodeficiency syndromes
B. After 6 months - agammaglobulinemias and dysgammaglobulinemia i.e. Burton's disease
C. Entire 3-18 month period - Wiskott-Aldrich syndrome neutrophil associated defects

III. 18 MONTHS - CHILDHOOD
Any of preceeding defects may appear, as well as acquired defects secondary to connective tissue disorders, malignancies, and auto-immune states.

Thirdly, none of the "patterns" described were observed in her course. For example, although her problems began after six months of age, she did not have the clinical course listed in section II B of recurrent pyogenic infections in multiple organ systems.

By this diagnostic approach, N.U., then, does not appear to have findings truly consistent with any of the IDS. What accounts for her recurrent infections? Her infections began at approximately 8 months of age in October, the beginning of the winter virus infection season in Arizona. By this age most residual maternal antibody protection is gone. Her course is most likely explained by temporal coincidence of two known biological phenomena; disappearing passive immunity and increased exposure to infectious agents.

Suggestions for Evaluation

Comparison of historical information obtained from the family and medical records of suspect children to the known findings of children with IDS assists in the identification of these children. Emphasis should be placed on defining the anatomic location of the infection, the specific cause of the infection, the course of the illness, and subsequent sequelae. In the presented patient, N.U., more information is necessary before establishing her normalcy. One can suspect she is normal and begin to rule out IDS on the basis of historical information, but a firmer diagnosis of "normalcy" can be afforded by physical examination data and simple laboratory findings.

N.U. had normal growth and development. Normal lymphoid tissue was present and there was no organomegaly. There were no skin lesions which had failed to heal or were recurrent. No joint abnormalities were present, nor was there evidence of chronic upper or lower respiratory disease. Essentially, her examination was within normal limits and none of the findings typically found in children with IDS were present.

TABLE III - SCREENING LABORATORY TESTS[a,b]

1. Complete blood count with morphology
2. Erythrocyte sedimentation rate
3. Quantitative immunoglobulins
4. ASO titer, isohemagglutinin titer
5. Rubella, polio, measles titers
6. Skin tests - mumps, Candida, coccidioidomycosis, Tbc
7. Chest x-ray - for thymus and chronic disease

a Normal, age-related values are available for items 1-4[10,11]
b Response to items 5-7 are also dependent on age and exposure[3]

To confirm the absence of immunodeficiency, a few simple laboratory tests can be performed. The results of such tests can establish the presence of normal immunologic function or lead one to suspect immunodeficiency. In Table III are listed the usual screening tests employed.

If any of the screening tests result in values below normal for age, a complete definition of the child's immune status is required. Identification of a child with low levels of immunoglobulins is just the beginning of that child's evaluation. The entire immunoglobulin-antibody apparatus must be explored. Defects in one aspect of the host defense mechanisms are often accompanied by others; in order to provide appropriate therapy, complete evaluation is recommended.

If the result of these screening tests is normal then both physician and family can be reasonably assured that the child's immune status is normal. This assurance is strengthened if the history, physical exam, and laboratory tests are *all* normal. Complete assurance often requires months of continued observation.

When to Refer

Complete immunologic definition requires elaborate laboratory procedures. For example, evaluation of immunoglobulin-antibody function may require: 1) determination of secretory antibody/IgA levels; 2) stimulation with specific antigens and measurement of response (includes common antigens, such as DPT, and uncommon ones such as bacteriophage or keyhole limpet

hemocyanin); 3) measurement of sequential IgM to IgG specific antibody conversion; 4) morphologic and functional assessment of "B" cells and "T" cells, and so on.

Thus, if a screening test leads the patient's physician to suspect a specific defect, referral for immunologic analysis is logical.

If there is discordance between the clinical observations which led one to strongly suspect immunodeficiency, and *normal* screening tests of immune function, more sophisticated laboratory analysis may be necessary.

Lastly, if in a given situation equivocal results are obtained, referral should be considered.

Above all, specific therapy should never be instituted until thorough and convincing diagnosis has been made.

SUMMARY

This approach to children with recurrent infection is practical in that: 1) the primary care physician can compare his patient's clinical findings to those known to occur in children with IDS; 2) screening laboratory procedures can be performed at local facilities or in the state laboratory; 3) identification of suspect patients can then lead to referral either early, if abnormal findings are uncovered, or late if the patient's problems persist after the primary evaluation has suggested a normal child.

REFERENCES

1. Bellanti JA, Schlegel RJ, The diagnosis of immunodeficiency diseases. Pediatr Clin N Am 18:49-72, 1971.
2. Dossett JH, Microbial defense of the child and man. Pediatr Clin N Am 19:355-372, 1972.
3. Bergsma D, (Ed), Immunologic deficiency diseases in man. Birth Defect Original Article Series IV, 1:Feb, 1968.
4. Bellanti JA, Immunology, Philadelphia, Pa., W.B. Saunders Co., 1971.
5. Fudenberg H, et al, Primary immunodeficiencies: Report of a World Health Organization Committee. Pediatrics 47:927-946, 1971.
6. Stiehm ER, Fulginiti VA, Immunologic disorders in infants and children. Philadelphia, Pa., W.B. Saunders Co., 1973.
7. Kersey JH, Gajl-Peczalska KJ, Nesbit ME, The lymphoid system: Abnormalities in immunodeficiency and malignancy. J Pediatr 84:789-796, 1974.
8. Gotoff SP, Neonatal immunity. J Pediatr 85:149-154, 1974.
9. Baehner RC, Molecular basis for functional disorders of phagocytes. J Pediatr 84:317-327, 1974.
10. Allansmith J, McClellan BH, Butterworth M, Maloney JR, The development of immunoglobulin levels in man. J Pediatr 72:276-290, 1968.
11. Buckley RH, Dees SC, O'Fallon WM, Serum immunoglobulins: I. Levels in normal children and in uncomplicated allergy. Pediatrics 41:600-611, 1968.

CURRENT STATUS OF SCREENING PROCEDURES IN CHILD HEALTH CARE

MICHAEL S. KAPPY, M.D.

INTRODUCTION

The last 40 years have seen remarkable achievements in the health care of children. The past and continuing development of our armamentarium of antibiotics and vaccines has sharply decreased the morbidity and mortality from most of the infectious diseases of childhood. Likewise, rapidly advancing electronic and nuclear technologies have greatly enhanced our diagnostic and therapeutic capabilities. There is also evident a growing trend to screen, or diagnose disease states prior to the time of their biologic or pathologic expression in order to institute measures to ameliorate or prevent them.

The number of illnesses for which early screening and diagnosis might be accomplished is limitless. A set of priorities for screening has been developed however, which will enable the health care provider to decide which conditions merit screening in most populations of children, and which screening procedures are most appropriate for a given practice. This paper will deal with broad principles of screening and diagnosis as well as specific recommendations for screening in providing optimal child health care. The reader is referred to several excellent reviews[1,4,6,8,9] which discuss these points in detail. The guidelines from the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) Program[5] are especially helpful to the practitioner in offering specific instructions regarding the performing of screening tests, addresses to obtain screening test materials, and other important information.

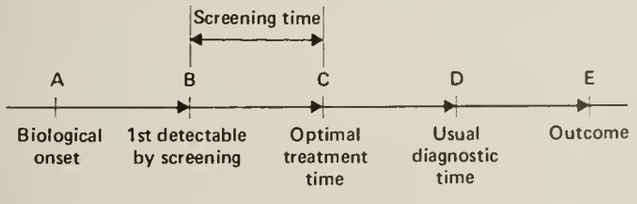
General Principles of Screening & Diagnosis[4,6]

Diseases or conditions selected for screening

From: Depart. of Family and Community Medicine, and the Depart. of Pediatrics, University of Arizona College of Medicine, Tucson, Arizona. (Dr. Kappy, Assistant Professor of Family and Community Medicine and Assistant Professor of Pediatrics.) Reprint requests to MSK, Department of Family and Community Medicine, Arizona Medical Center, Tucson, Arizona 85719.

should have a significant morbidity or mortality, or in the case of the developing child, a profound effect on future intellectual function and ability to communicate. Screening for hearing and visual problems should be performed because of their potential effects on the child's ability to speak, learn and otherwise achieve full intellectual potential and communication skills. The diseases screened for should also be relatively prevalent in the population (about 1%) however, phenylketonuria (PKU) is a noteworthy exception. The conditions should also be treatable, or at least controllable as with genetic counseling for family planning. The importance of available treatment cannot be over-emphasized. Little is to be gained by screening for abnormal conditions when the affected individuals cannot be provided with or referred to appropriate treatment facilities. Lastly, there should be ample evidence that the time at which the disease is first detectable by screening ("B" in the Figure[6] below) precedes the optimal time of treatment ("C"), i.e., that there is an identifiable and practical screening time, and that the optimal time for treatment ("C") precedes the usual time of discovery ("D"). Note that conditions such as diabetes mellitus or the nephrotic syndrome do not meet these last two criteria, and that routine "dipsticking" of the urine for glucose or protein in otherwise healthy children is *no longer recommended.*

PROGRESSION OF DISEASE



Tests used in screening must likewise meet certain criteria. Preferably, they should be relatively painless, easy to perform and inexpensive. The tests should also be reliable, in that there is good agreement between two individuals doing the same test at a specific time and that split samples of blood or urine correlate closely. In addition, it should be known how much difference can be expected when testing the same child at different times, so that a realistic interpretation may be made of a single test. Finally, the test or observation must be valid, that is, it should be sufficiently sensitive to correctly diagnose the disease, yet specific enough not to falsely label normal children as diseased.

In general the recommended tests meet most of the criteria mentioned. In some instances, however, one factor in favor of testing, such as the extreme pathologic effects of PKU or tuberculosis, outweighs factors against testing such as their low prevalence and significant costs of the tests.

Specific Screening Procedures

There are four periods in the life of a child when screening for existing or potential problems is most important: the newborn period; the first twelve months of life; the preschool period (ages 3-4 years); and the pre-adolescent period (ages 11-12 years). The practitioner should especially direct attention to the child at these ages, while still maintaining a watchful eye for problems at other ages.

Growth, Development and Behavior Disorders

The areas which merit particular emphasis in screening because of relatively high yield and intervention potential are those of growth, motor and intellectual development, and behavioral status. Screening "tests" such as a careful intake history should be done. The history should identify high risk children by specifically looking into complications of pregnancy such as first trimester rubella, pyelonephritis or other urinary tract infection, drugs taken, toxemia, X-rays received and so forth. In addition, the perinatal course should be carefully reviewed to identify potentially disabling events

such as abnormal delivery, small-for-dates birth weight, neonatal hypoglycemia or hyperbilirubinemia, seizures, infection, ototoxic drugs, umbilical catheterization and other problems. The child's early feeding history, illness history and early developmental progress including speech should also be examined in detail. The history should also include questions regarding parental attitudes toward the child that might indicate potential for child abuse, emotional neglect or other future problem. Pertinent family history should include questions regarding genetic disorders, early myocardial infarction, mental retardation, and emotional illness. Further history should include questions related to environmental risks, such as household drugs and toxins, seat belt use, swimming pool rules, and presence of firearms in the house. In addition, the routine physical exam performed at regular intervals[1,5,8,9] should focus particularly on signs of disordered growth and development and should include measurements of height, weight, and head circumference, estimation of muscle strength and coordination, and signs of child abuse or neglect. Screening for development should be done every 2-3 months during the first year of life, every 6 months during the second year, and every 6-12 months thereafter, although the practitioner may wish to alter this schedule in clearly normal children or children who are deemed high-risk as the result of the intake interview and physical exam. An excellent screening device is the Denver Developmental Screening Test (DDST), which usually may be done by non-physician personnel in 10-20 minutes and when properly scored correlates well with more detailed diagnostic testing.[3]

Screening for behavioral difficulties around toilet-training, peer or sibling rivalry, school phobia and parental-child interaction should also be done routinely by skillful questioning of the parents.

Hearing and Vision

The incidence of conductive hearing loss in preschool and school age children may approach 10%,[5] and it is one of the leading causes of language, speech and learning delays. Failure to achieve normal language and speech by school age may result in permanent impairment. Screening by parental report, ascertaining language milestones in the infant, and by pure tone audimetry in the preschooler is recommended, with repeat testing every 3-4 years thereafter. Children with high-risk factors in their history such as neonatal insults, ototoxic drugs, maternal rubella exposure, family history of deafness or nephritis, cleft palate, other congenital abnormalities of the head and neck, and frequent otitis media should be screened more often.

Visual defects are likewise quite prevalent, and are found in 5% of preschool children and in up to 25% of school age children.[5] Although 3/4 of these defects are refractive errors which have harmful effects on learning, 10% are amblyopia which may lead to permanent loss of vision in the affected eye.[5] In the infant, ability to seek small objects, as well as parental reporting may serve as gross vision testing, and in the older child the illiterate E test or standard Snellen chart may be used. Any child over age 3-4 years with less than 20/40 vision in either eye or a 2-line difference in acuity between eyes should be referred to an ophthalmologist.

Eye muscle balance may be ascertained by parental report, or by eliciting a pupillary reflex by shining a light into the child's eye from several feet away and noting whether it is reflected from corresponding parts of each cornea. When possible the alternate cover test should be done.[5]

Blood Pressure - This should be determined and recorded during the preschool years, at about age 10 years, and every year or two thereafter. Norms[7] and procedures[1,7] have been described. It has been cited that diastolic blood pressures greater than 90mm Hg may lead to the same increased morbidity in children as in adults.[1] Persistent hypertension in children always calls for further evaluation. (The recommendation for routine blood pressure measurement is questioned by North.[8,9]

Dental Status - This should be done at regular intervals in all children after age three years, as a means of identifying dental problems early, and as a means of encouraging routine dental care and prophylaxis, so that abnormalities of position and bite with permanent teeth may be avoided.

LABORATORY SCREENING TESTS

The following Table gives a summary of current recommendations for laboratory screening in child health care. Specific explanatory points will be made as footnotes, however the reader may wish to consult the reviews cited for further details.

RECOMMENDED LABORATORY SCREENING TESTS AT VARIOUS AGES

	NEWBORN	FIRST 12 MONTHS	PRE-SCHOOL	PRE-ADOLESCENCE AND OLDER
PKU	X	Xa	—	—
ANEMIA	X	X (9-12 mo)	—	X
BACTERIURIA	—	—	Xb	X
LEAD INGESTION	—	Xc	X	—
SICKLE CELL DISEASE	Xd	Xd	—	—
SICKLE CELL TRAIT	—	—	—	Xe
CHOLESTEROL	—	—	Xf	—
TUBERCULIN TESTING	—	Xg	X	X
VERNEREAL DISEASES	—	—	—	Xh

X - General age for screening.

a -The routine Guthrie blood test is done in the nursery. A repeat Guthrie or urinary Phenistix test should be done within the first 1-2 months of life to pick up affected individuals missed by too early blood testing.

b -This test should be done in girls only, every 3-4 years commencing with the 2 or 3 year old but including all symptomatic children as well. Several dipstick and dipslide tests are available.

c -Blood lead level is the most reliable test, and should be done where ingestion of lead-based paint or the presence of lead-containing pottery glazes is likely, based on a knowledge of the patient's environment. Screening should be done beginning at 9-12 months, and continued every 6 months untill age 5 years or so in high-risk populations, or until the risk has been removed.

d -Screening by hemoglobin electrophoresis - in high-risk populations at birth, or early in the first year. Thereafter, only after screening for symptoms or anemia.

e -In high-risk populations at reproductive age for purposes of genetic counseling only.

f -Only in children with a positive family history of early (prior to 50 years) myocardial infarction, stroke, etc. Ideally, type II hyperlipoproteinemia should be documented if serum cholesterol levels are high (greater than 200 mg per deciliter), so that dietary management can be instituted. Hypothyroidism and chronic renal or hepatic disease should be ruled out.

g -Opinion is divided about the appropriateness of routine tuberculin testing, but TINE testing every 2 years is recommended.[10] More frequent testing is indicated in high risk populations, or in tuberculosis contacts.

h -Venereal diseases are of *epidemic* proportions at this time. Routine serologic tests for syphilis should be done on all sexually active adolescents, and a cervical smear and culture for gonococcus should be done on all sexually active females, although interviews regarding sexual activity may be misleading. Rectal or pharyngeal cultures should be taken if indicated.

SUMMARY

A major source of disease prevention in current child health care is early identification through screening. Ideally, abnormal conditions should be detectable by screening early enough to be ameliorated or prevented by treatment. A careful history, a complete physical exam including body measurements, and a variety of screening tests will detect many potentially disabling conditions in children today. The health practitioner should evaluate his/her own practice to decide which screening tests justify their cost and inconvenience. He/she should consider the prevalence and potential disability caused by the condition screened in arriving at the answers. Clearly, a general battery of tests is a guide, and should be tailored by the practitioner to the patient and to populations of patients in the community. The reader is referred to the more comprehensive reviews cited for a fuller understanding of recommended screening, in particular, the guidelines for the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) Program.[5]

REFERENCES

1. Bailey EN, et al, Screening in pediatric practice. Pediatr Clin N Am 21:123, 1974.
2. Edwards PQ, Tuberculin testing of children. Pediatrics 54:628, 1974.
3. Frankenburg WK, et al, The revised Denver Development Screening Test: Its accuracy as a screening instrument. J Pediatr 79:988, 1971.
4. Frankenburg WK, Pediatric screening. Adv Peds 20:149, 1973.
5. Frankenburg WK, North AF, A guide to screening for the Early and Periodic Screening, Diagnosis and Treatment program (EPSDT). U.S. Dept. of Health, Education, and Welfare, Social and Rehabilitation Service, Washington, D.C. 20201. Publ. SRS-74-24516, 1974.
6. Frankenburg WK, Selection of diseases and tests in pediatric screening. Pediatrics 54:612, 1974.
7. Londe S, Blood pressure standards for normal children as determined under office conditions. Clin Pediatr 7:400, 1968.
8. North AF, Screening in child health care: Where are we now and where are we going? Pediatrics 54:631, 1974.
9. North AF, Screening in child care. American Family Physician 13:85, 1976.
10. Steigman AJ, Kendig EL, Frequency of tuberculin testing. Pediatrics 56:160, 1975.

SCABIES: PROBLEMS IN PHYSICIAN RECOGNITION

RONALD C. HANSEN, M.D.
PETER J. LYNCH, M.D.

ABSTRACT

Scabies is occurring in Tucson, as it is elsewhere, in epidemic proportions. Unfortunately only 60% of primary care physicians responding to a questionnaire survey were confident of their diagnostic ability. Our data suggest that both diagnostic confidence and the number of cases of scabies recognized in practice depend directly on training experience. Specifically, nearly all physicians who had seen at least five patients with scabies during residency believed they could dependably recognize the disease. The diagnostic features of scabies are reviewed, and treatment recommendations are discussed.

Throughout the world scabies has shown periods of decline and resurgence. The current epidemic of scabies began in England, India and other portions of the world approximately ten years ago.[1] Since the early 1970's there has been an increase in the United States as well.[2] We have recently noted a substantial increase in the number of patients with scabies seen in our clinics and as we looked at the referral pattern, we recognized that there was considerable variation among physicians in their ability to recognize and adequately treat these patients. Because of these observations we decided to investigate the medical training, practice experience, and diagnostic ability of those physicians who might be expected to see scabies in the Tucson area. We obtained this information through a questionnaire survey.

I. Materials and Methods:

A questionnaire was prepared and mailed to physicians in the Tucson area who would be most likely to see patients with scabies in their practice. This group included both faculty members and community practitioners in Pediatrics, Internal Medicine, Dermatology, and Family Practice. For the purposes of this manuscript "Family Practice" includes all general practitioners. The same questionnaire was also sent to University of Arizona house staff members training in Pediatrics, Internal Medicine, and Family Practice.

The questionnaire inquired about the specialty background of the physician, the year of graduation from training, and the number of patients with scabies seen in medical school, training, and practice. Questions were also asked about the diagnostic criteria, therapeutic modalities, and diagnostic confidence.

II. Results of Survey:

Completed questionnaires were returned by 123 physicians. These included 39 Internists, 18 Pediatricians, 14 Family Practitioners, 13 Dermatologists, 15 residents in Internal Medicine, 13 residents in Pediatrics, and 11 residents in Family Practice.

Initially we had hoped to get an estimate of the total number of cases of scabies seen in Tucson, but it became apparent that reliable figures could not be retrieved from office records. Consequently, we asked physicians to estimate the number of cases they had seen since entering practice. Forty-eight percent of the 86 practitioners who responded selected the largest experience category offered on the questionnaire — ten or more cases. Dermatologists were the most likely and Internists the least likely to have seen ten or more cases (Table 1). Many of the respondants indicated that they had actually seen several times that number. This supported our belief that scabies was epidemic in Tucson, as it is elsewhere in the State and country.

Table 1

NUMBER OF PHYSICIANS HAVING SEEN 10 OR MORE PATIENTS WITH SCABIES SINCE STARTING PRACTICE

TYPE OF PHYSICIAN	NUMBER	(PERCENT)
Internists	8 39	(21%)
Pediatricians	9 19	(47%)
Family Practitioners	12 17	(71%)
Dermatologists	12 13	(92%)
TOTAL	41 88	(48%)

The above data could, of course, be looked at in another way, Fifty-two percent of the practicing physicians who responded had seen fewer than ten cases of scabies since they had entered practice. We wondered if this variation in practice experience represented a failure to recognize scabies, or whether patients with scabies were not appearing in the practices of

From: Depart. of Pediatrics & Internal Medicine, University of Arizona College of Medicine, Tucson, Arizona. (Dr. Hansen, Assistant Professor of Pediatrics; Dr. Lynch, Professor of Medicine and Head of Division of Dermatology.) Reprint requests to RCH, Department of Pediatrics, Arizona Medical Center, Tucson, Arizona 85724.

Table 2

BACKGROUND EXPERIENCE AND DIAGNOSTIC CONFIDENCE OF PHYSICIANS REGARDING PATIENTS WITH SCABIES

TYPE OF PHYSICIAN	NUMBER & (PERCENT) OF THOSE SEEING 5 OR MORE PATIENTS WITH SCABIES IN MEDICAL SCHOOL	NUMBER & (PERCENT) OF THOSE SEEING 5 OR MORE PATIENTS WITH SCABIES IN POST-GRADUATE TRAINING	NUMBER & (PERCENT) OF THOSE EXPRESSING CONFIDENCE IN THEIR ABILITY TO RECOGNIZE SCABIES
Internists	8 39 (21%)	10 39 (26%)	13 39 (33%)
Pediatricians	6 18 (33%)	12 18 (67%)	11 18 (61%)
Family Practitioners	6 14 (43%)	11 14 (79%)	13 14 (93%)
Dermatologists	2 13 (15%)	7 13 (54%)	13 13 (100%)
Internal Medicine Res.	2 15 (13%)	1 15 (7%)	5 15 (33%)
Pediatric Residents	2 13 (15%)	5 13 (38%)	10 13 (77%)
Family Practice Res.	1 11 (9%)	5 11 (45%)	9 11 (82%)
TOTAL	27 123 (22%)	51 123 (41%)	74 123 (60%)

some physicians. We attempted to answer this question by "testing" the physicians relative to their diagnostic abilities. Unfortunately, when asked to describe their diagnostic criteria for this disease, many physicians either failed to answer the question or responded in a fashion which was unconvincing, but not incorrect. For example, many physicians indicated that a diagnosis could be made by the presence of pruritic lesions in a typical distribution pattern. From this answer it was impossible to judge whether the respondant actually knew the typical distribution pattern. We also looked at diagnostic ability in a less direct way by including a question assessing the respondant's confidence in his ability to recognize scabies. Seventy-four of the 123 (60%) respondants indicated that they were confident in their ability to make the correct diagnosis (Table 2). Among the various specialties, Internists were considerably less certain of their diagnostic capabilities than were Dermatologists, Family Practitioners, and Pediatricians (Table 2).

We suspected that diagnostic confidence would correlate well with training experience in medical school and residency and that it would also correlate with the number of cases one had seen since entering practice. This proved to be generally true in that 74% of the physicians who had seen five or more cases in training had seen five or more cases since starting practice. Furthermore, of those who had seen five or more cases in practice, 90% were confident of their diagnostic ability. In contrast, only 42% of those who saw fewer than five cases in training have seen as many as five cases in practice and only 20% of those seeing fewer than five cases in practice were confident of their diagnostic ability. However, training experience in medical school did not correlate as well as residency experience with number of cases seen and diagnostic confidence (Table 2).

This approach can be applied to groups of physicians by specialty as well as to individuals. Thus, Internists as a group had considerably less experience with scabies during their residency training and were, as a group, less confident in their diagnostic ability (Table 2). It should be emphasized that those Internists who had had adequate training experience were recognizing scabies in their practices and were as confident of their diagnostic abilities as were the other physicians.

One further point can be derived from the data seen in Table 2. Diagnostic confidence appears to correlate with experience in residency training and it can be noted that a considerable number of our residents currently in training (particularly those in Internal Medicine) have thus far seen fewer than five patients with scabies. As was mentioned above, diagnostic confidence was very poor for those with so little experience. Our review of the data suggests that residency experience with 5 to 10 cases constitutes the "make or break" point with regard to scabies recognition and diagnostic confidence in practice.

III. Review of Diagnosis and Therapy:

The clinical features of scabies are characteristic and with a little experience and a reasonable index of suspicion, physicians become adept to the handling of these patients within a short period of time. The characteristic features of the disease along with its therapy are reviewed in the following paragraphs.

HISTORY

Pruritus, frequently with nightime prominence, is almost invariably present.[3] The pruritus has usually been present for days or weeks and, as a reflection of contagion, will usually be found also in family members, playmates, or sexual partners.

EXAMINATION

The constant pruritus generally results in vigorous excoriation. This in turn leads to early destruction of the characteristic linear vesicles known as burrows. Nevertheless, a few intact vesicular or pustular burrows may be found among the more numerous excoriated and crusted papules.[3] These scabetic lesions may occur anywhere on the body but are best looked for (in decreasing order of involvement) on the fingerwebs, elbows, flexor surface of the wrists, anterior axillary folds, and over the abdominal skin. The areola are frequently involved in women as is the shaft and glans of the penis in men. Facial and scalp lesions are rarely seen in adults but are occasionally present in children.

LABORATORY

Recovery of the causative mite, *Sarcoptes scabei*, requires both skill and luck. The top of a nonexcoriated lesion is scraped with a scapel blade and the material is transferred to a drop of emersion oil which has previously been placed on a microscopic slide. The cover slip is added and the slide is examined microscopically under scanning power. The presence of feces, ova, or mites confirms the diagnosis.[4,5]

Ordinarily we do not do microscopic examination not only because of time consumption and poor yield,[3] but also because the clinical picture described above plus the response to therapy gives sufficient diagnostic accuracy.

THERAPY

Treatment of scabies involves the application of 1% gammabenzene lotion (Kwell) to the entire body below the neck. The lotion must be left in place for at least 24 hours before it is washed off. A second application three days later is usually recommended though it is seldom necessary. All children in the family plus any symptomatic adults should be treated simultaneously to avoid a "ping-pong" effect. Routine laundering of linens and personal clothing should be carried out at the time of treatment.

Treatment failure is uncommon. The reappearance of lesions generally signifies reinfection rather than resistance to treatment. This reinfection usually occurs as a result of contact with untreated or inadequately treated infected persons. In those rare cases where resistance to Kwell is suspected, Crotamiton (Eurax) can be tried. Persistant itching without the reappearance of lesions is generally a manifestation of the "itch-scratch" cycle and it can be treated with topical steroids.

In summary, our data show correlation between the number of patients seen with scabies in residency training, the number of patients which will be identified as having scabies in practice, and diagnostic confidence. Medical school experience did not correlate well with later scabies recognition or diagnostic confidence. It appears that residents need to have seen a minimum of five patients with scabies during training in order to maintain diagnostic confidence in practice. Very few Internal Medicine residents are achieving this experience and the situation for Pediatric and Family Practice residents is only marginally better. With the realization that the current scabies epidemic includes many patients with atypical presentations,[2] it is obvious that greater teaching effort must be made at the resident and postgraduate level, if we are to contain the local and worldwide resurgence of this disorder.

REFERENCES

1. Orkin M, Resurgence of scabies, JAMA 217:593:1971.
2. Orkin M, Today's scabies, JAMA 232:822:1971.
3. Sehgal VN, et al, Scabies: a study of incidence and a treatment method, International Journal of Dermatology, April-June: 1972.
4. Muller G, et al, Scraping for human scabies—a better method for positive preparations, Arch Derm 107:70:73.
5. Hoke AW, Scabies scraping, letter to editor, Arch Derm 108:424:73.

NEW ADVANCES IN DRUG THERAPY OF ASTHMA IN CHILDHOOD

HUGH C. THOMPSON, M.D.
ROBERT C. STRUNK, M.D.
VICTOR A. ELSBERRY, B.S.

ABSTRACT

Drug therapy of asthma has been markedly altered in the past several years by the introduction of new drugs and more efficient use of the old standard drugs. This has been made possible by advances in the understanding of the immunologic and neural mechanisms of asthma. This paper reviews those recent advances and discusses the rational use of theophylline compounds, the newer oral and inhaled sympathomimetics, cromolyn sodium, atropine as an aerosol, alternate day prednisone therapy and inhaled steroids in the primary care of asthmatics.

Drug therapy of asthma has changed in the past several years. Several new bronchodilator agents, cromolyn sodium and steroids for inhalation have been introduced. The pharmacokinetics of theophylline compounds have been studied and applied to patient management. Simple pulmonary function tests are available and should be used to monitor the effect of therapy.

Physicians should always remember that drug therapy is only one facet of the management of asthma. Determination of the specific allergens and other excitants of asthma in the individual patient is the cornerstone of diagnosis and therapy. A detailed initial history and continued meticulous observation of the circumstances surrounding each attack are necessary. Dates, days of the week, aeroallergen inhalation, climatic factors, air pollution (including tobacco smoke), infections, food and drug ingestion, and emotional stress should be documented as completely as possible.

In addition, skin testing and well-monitored elimination of and challenges with suspected causes are helpful. Rest, fluids, breathing exercises, and percussion and postural drainage are important measures sometimes overlooked.

IMMUNOLOGIC AND NEURAL MECHANISMS: In vitro measurement of histamine release from human peripheral basophils and from mast cells in lung fragments has clarified the immunologic mechanisms of mediator release and the effect of drugs on this reaction. Although exact pharmacologic mechanisms are not completely understood, several theories are well based in experimental observations.

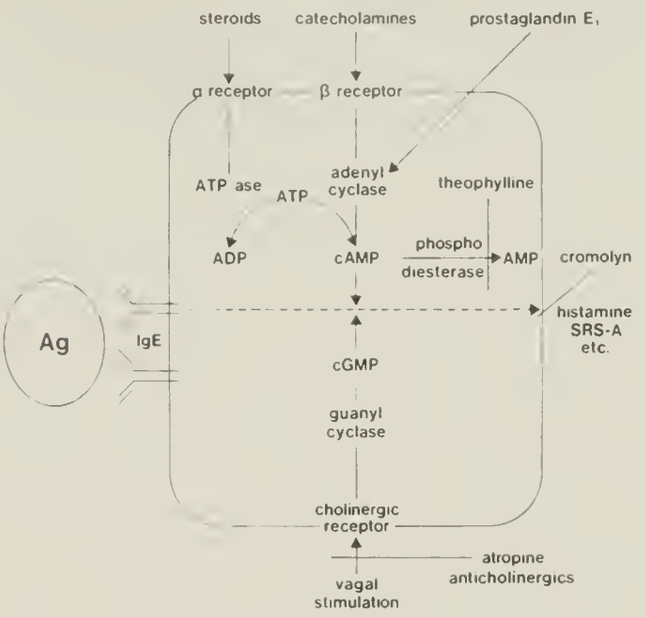


Figure 1

The allergic reaction and the pharmacologic controls of mediator release from basophils or mast cells. See text for explanation.

Figure 1 is a schematic presentation of the allergic reaction and the pharmacologic control of mediator release. Immunoglobulin E (IgE), discovered in the later 1960's, is present in minute amounts in the serum and concentrates on the surface of peripheral basophils and tissue mast cells. IgE antibodies are produced against specific allergens. Interaction of an appropriate allergen-antigen (Ag) with two or more cell surface IgE molecules specific for the antigen initiates biochemical reactions resulting in the release of chemical mediators: histamine, slow reacting substance of anaphylaxis (SRS-A), and others. Mediator release is modulated by the intracellular levels of two hormones, cyclic adenosine 3', 5'-monophosphate (cAMP) and cyclic guanosine 3', 5'-monophosphate (cGMP). Higher levels of cAMP or lowered levels of cGMP decrease mediator release and thus allow bronchodilation. Most drugs presently used in asthma act by increasing levels of cAMP, thus lessening mediator release. Stimulation of the β_2-receptor-adenyl cyclase system on the cell surface by catecholamines (sympathomimetics),

From: Depart. Pediatrics & Pharmacy, Arizona Medical Center, The University of Arizona, Tucson, Arizona (Dr. Thompson, Professor of Pediatrics; Dr. Strunk, Assistant Professor of Pediatrics; Mr. Elsberry, Pharmacist). Reprint requests to HCT, Department of Pediatrics, Arizona Medical Center, Tucson, Arizona 85724.

promotes cAMP formation from adenosine triphosphate (ATP); - a major source of energy for cellular reactions. Xanthines, eg., theophylline, protect cAMP from breakdown by inhibition of the enzyme phosphodiesterase.

Evidence suggests that steroids act through the α -receptor to reduce elevated cellular levels of the enzyme ATP'ase, which competes with adenyl cyclase for ATP. Increased amounts of ATP'ase may be responsible for the decreased cAMP, and the reduced response to sympathomimetics found in the cells of asthmatics. Whatever the mechanism, it is clear that steroids raise levels of cAMP and enhance the responsiveness of the cells to sympathomimetics. These actions apparently are indirect and depend on the stimulation of synthesis of new proteins in the cell, explaining the delayed effect of steroids in asthma.

Cromolyn sodium does not affect the antigen-antibody reaction on the cell surface or intracellular levels of cAMP or cGMP. It apparently stabilizes the basophil or mast cell membrane so that mediator release is inhibited.

Recently several new agents that affect these intracellular hormones have been described. The prostaglandins, a family of unsaturated fatty acids, may play a role in allergic disease. Some have opposing actions in asthma, E_1 and E_2 acting as bronchodilators and F_2 as a bronchoconstrictor. Both the amount and ratio of these are reported to be abnormal in asthmatics,[1] but their definitive role in asthma is not yet established.

Demonstration of the importance of cGMP in modulating mediator release has rekindled interest in the parasympathetic mediation of asthma and the use of anti-cholinergics to reduce cGMP. Atropine, a known bronchodilator, has recently been restudied with modern techniques.[2] It has been shown that oral antihistamines, which have anticholinergic properties, may be useful in certain asthmatics.[3]

THEOPHYLLINES: The theophyllines are now recommended as the bronchodilators of first choice. Weinberger and Bronsky[4] and others suggest that they should not be used with ephedrine. They found that theophylline alone was as good a bronchodilator as the more traditional combinations of ephedrine and theophylline. Side effects of the combinations were greater than for theophylline alone. The serum half life of intravenously or orally administered theophylline may be two to eight hours in different persons and previously recommended doses are population averages. For this reason, dosage and time interval between doses must be individualized for optimum effect. Particularly in children, theophylline should be ordered on a mg/kg of body weight basis. The recommended oral single dose is between 5 and 8 mg/kg, employing the least amount which gives good results. Care should be taken to document that the effect lasts the full length of time between doses. Theophylline levels can be measured and should be maintained between 10 and 20 mcg/ml for optimum therapeutic effect. Concentrations above 20 or 25 mcg are often associated with adverse reactions. Serum levels are available at hospital laboratories in Phoenix and Tucson. The protocol for a half life may be obtained from the authors. In practice, the clinician will usually rely upon careful history and observation to monitor drug effects, remembering that abdominal pain and vomiting may be the first signs of toxicity.

Because of its relatively short duration of action, theophylline should be given around the clock in severe asthma, with the use of a middle of the night dose, or, if found effective in the individual, a sustained release preparation such as Aerolate® or Slophylline® given at bedtime. Table 1 gives the pertinent information about commercial preparations of the xanthines.

Aminophylline rectal suppositories are contraindicated because of erratic absorption. When gastric irritation occurs from oral administration of a non-toxic amount of drug, or when a small child absolutely refuses to take oral medication, solutions for rectal use, Somophylline R or Fleet's®, are available. These are well absorbed if the rectum is empty.

Mitenko and Ogilvie have suggested that aminophylline be given as a continuous infusion after an initial loading dose.[5] Because of the marked variation in drug half life, this method should not be used unless the half life is known or serum levels can be drawn regularly. If this cannot be done, intravenous infusion over 20 minutes may be given every six hours, monitoring the effectiveness by physical examination and/or simple pulmonary function testing.

SYMPATHOMIMETIC DRUGS: A new group of oral sympathomimetics is now available.[6] Metaproterenol (Alupent,® Metaprel,®), terbutaline (Brethine,® Bricanyl®) and protokylol (Ventaire®) are examples. Salbutamol or Albuteral is not yet released in the United States. These drugs are reported to have longer action

Table 1. - Selected Xanthine Preparations and Their Anhydrous Theophylline Equivalence*

Brand Name	Generic Name	Dose Form	Anhydrous Theophylline Equivalent	Duration of Action	Wholesale Cost To Pharmacy
Aerolate	Theophylline				
Senior		260 mg capsule	260 mg	Long	7.85/100
Junior		130 mg capsule	130 mg	Long	6.50/100
III		65 mg capsule	65 mg	Long	5.00/100
Elixir, 10% Alcohol		160 mg/15 ml	160 mg/15 ml	Short	4.85/pint
Aminodur Dura-Tabs	Aminophylline	300 mg tablet	258 mg	Long	9.62/100
Aminophyllin	Aminophylline	100 mg tablet	85 mg	Short	1.56/100
		200 mg tablet	170 mg	Short	2.64/100
Choledyl	Oxtriphylline				
Tablets		100 mg tablet	64 mg	Short	3.55/100
		200 mg tablet	128 mg	Short	4.70/100
Elixir, 20% Alcohol		100 mg/5 ml	64 mg/5 ml	Short	4.80/pint
Elixophyllin	Theophylline				
Capsule		200 mg capsule	200 mg	Long	7.56/100
Elixir, 20% Alcohol		80 mg/15 ml	80 mg/15 ml	Short	3.52/pint
Fleet Theophylline	Theophylline				
Rectal Unit	monoethanolamine	500 mg/30 ml		Short	5.33
		250 mg/30 ml		Short	5.33
Lufyllin	Dyphylline		Is not transformed	Short	6.69/100
Tablets	(dihydroxypropyl	200 mg tablet	in body to theo-		
Elixir, 20% Alcohol 100 mg/15ml	theophylline)		phylline	Short	3.75/pint
Slo-phyllin					
Gyrocaps		125 mg capsule	125 mg	Long	6.60/100
		250 mg capsule	250 mg	Long	8.20/100
Tablets		100 mg tablet	100 mg	Short	3.25/100
		200 mg tablet	200 mg	Short	4.25/100
Syrup		80 mg/15 ml	80 mg/15 ml	Short	3.25/pint
Somophyllin	Aminophylline				
Rectal Solution		300 mg/5 ml	255 mg/5 ml	Short	4.20/3 oz
Theolair	Theophylline				
Tablet		125 mg tablet	125 mg	Short	5.31/100

*Table modified

*Table modified from Ellis and Eddy (*J. Allergy Clin. Immunol.* 53 (2):116-118 (Feb) 1974
1. American Druggist Blue Book, October, 1975 Edition

and fewer undesirable side effects than ephedrine or isoproternol. Clinically their effects seem quite variable and need to be evaluated in each individual. Ephedrine still works well in some asthmatics and may be preferable to the new sympathomimetics or even theophylline in an unusual asthmatic. Metaproternol is available in a metered dose inhaler and has the same indications as inhaled isoproterenol, with care to avoid overuse. Terbutaline is available for subcutaneous injection. Table 2 gives data on selected sympathomimetic preparations.

Intravenous isoproterenol may be considered in status asthmaticus with impending respiratory failure when patients have not responded to epinephrine, intravenous aminophylline, steroids and inhaled isoproterenol.[7] Progress must be carefully monitored by arterial blood gases. Facilities for assisted ventilation should be immediately available if intravenous isoproterenol fails.

CROMOLYN SODIUM: The use of inhaled cromolyn sodium (Aarane,® Intal ®) as a *preventive* of attacks of allergen- or exercise-induced asthma has been thoroughly reviewed.[8] It deserves a trial in severe perennial asthma, especially in children. If after several weeks there is no improvement, the drug should be stopped. Use of cromolyn should be discontinued during severe wheezing. A recent article[9] suggests that aminophylline or sympathomimetics may be as effective as cromolyn as a prophylactic of exercise-induced asthma.

ATROPINE: In the study previously men-

Table 2 — Selected Sympathomimetics

Brand Name	Generic Name	Dosage Form	Cost[1]
Alupent	Metaproterenol sulfate		
Inhaler		Metered Dose Inhaler	3.53/15 ml
Tablet		20 mg tablet	7.08/100
Syrup		10 mg 5 ml syrup	6.10 pint
Brethine	Terbutaline sulfate		
Injection		1 mg ml ampul	7.67/10 ampuls
Bricanyl	Terbutaline sulfate		9.39/100
Injection		1 mg ml ampul	5.65/10 ampuls
Tablet		2.5 mg tablet	6.75/100
		5 mg tablet	10.05/100
Isuprel	Isoproterenol hydrochloride		
Mistometer		1:400 metered pocket nebulizer	3.15/15 ml
Mistometer		1:20 solution for aerosol	2.52/10 ml
		1:100 solution for aerosol	2.67/10 ml
Medihaler-Epi	Epinephrine bitartrate	7 mg ml metered pocket inhaler	3.45/15 ml
Medihaler-Iso	Isoproterenol sulfate	2 mg ml metered dose inhaler	3.30/15 ml
Metaprel	Metaproterenol sulfate		
Inhaler		metered dose inhaler	3.70/15 ml
Tablet		20 mg tablet	7.06/100
Syrup		10 mg 5 ml syrup	6.06 pint
Ventaire	Protokylol hydrochloride		
Tablet		2 mg tablet	4.88/100

1. American Druggist Blue Book, October, 1975 Edition

tioned, inhaled atropine improved forced expiratory flow rates and airway resistance as effectively as isoproterenol in patients with severe perennial asthma. Drying of secretions was not reported. The solution in the vials for injection is given with standard aerosol technique in a dosage of 0.07 mg/kg body weight. Atropine should be used only with careful observation of the patient.

STEROIDS: For those rare asthmatics who fail to respond to all other forms of therapy, long term steroids may be indicated. Therapy is generally started with daily doses until symptoms have cleared and pulmonary function has returned towards normal. Alternate day therapy with a single dose of a short acting steroid, such as prednisone, given at 8:00 AM, every 48 hours, reduces the incidence of side effects. To make the transition from daily to alternate day dosage, the initial alternate day dose should be three times the previous daily dose,[10] with subsequent reduction if the alternate day regimen is effective. The integrity of the patient's own cortisol secretion may be tested by doing a serum cortisol in the morning, just before the alternate day dosage. Use of long acting steroids is contraindicated, as the purpose of alternate day therapy is to allow the patient's adrenal to function between doses.

There has been enthusiasm in Great Britain, and in clinical trial here, for the use of inhaled, nebulized beclomethasone and triamcinolone in steroid-dependent asthmatics. FDA release of beclomethasone as Vanceril® in the United States is expected soon. The dose is 100-200 mcg, up to 4 times a day, with slow reduction of the oral steroid dosage five to ten days after inhalation therapy is started.[11] Oral candidiasis has been observed in some patients. Oral steroids may need to be temporarily resumed in the presence of severe wheezing.

ASPIRIN INTOLERANCE: Rachelefsky, et al[12] have recently reported that of 50 chronic asthmatics without a history of aspirin sensitivity, 14 showed a decrease of 30% in lung function after 300 mg of aspirin. It would seem prudent to substitute acetaminophen (Tylenol,® Tempra®) for aspirin in children with asthma.

TESTS TO CONFIRM DRUG EFFICACY: The efficacy of drug therapy should be objectively measured by use of simple pulmonary function testing. This can be done during hospitalization, in the physician's office, or even in the home with loaned equipment. Simple tests repeated several times daily assist the management of status. If other equipment is not available, the Wright Peak Flow Meter is light, portable, and inexpensive.* It gives results comparable to the forced expiratory volume at one second (FEV_1). One value of pulmonary function tests is that they may show restricted function even though

no wheezing is heard.

SUMMARY:

1. The new concepts of the cellular basis for the allergic reaction and its pharmacologic control have been presented.
2. Theophyllines are the preferred bronchodilators of first choice.
3. New sympathomimetic drugs - metaproterenol, terbutaline and protokylol - are now available.
4. Isoproterenol can be used intravenously in severe status with adequate precautions.
5. Cromolyn sodium is a preventive of allergic- and exercise-induced asthma.
6. Atropine by inhalation is an effective bronchodilator in some asthmatics.
7. Alternate day steroid therapy is preferred to daily for chronic use.
8. Inhaled beclomethasone may become a steroid of choice for severe asthma.

*Wright Peak Flow Meter - available directly from - Armstrong Industries, Inc., 7712 Promeria St., Carlsbad, California 92008 - Current price $245.

REFERENCES

1. Nemoto T, Aoki H, Ike A, Yamada K, Kondo T, Kobayashi S, and Inagawa T: Serum prostaglandin levels in asthmatic patients, J Allergy Clin Immunol 57:89-94, 1976.
2. Cropp GJA, Role of the parasympathetic nervous system in the maintenance of chronic airway obstruction is asthmatic children, Am Rev Resp Dis 112:599, 1975.
3. Karlin JM, The use of antihistamines in allergic disease, Pediatr Clin N Am 22:157-161, 1975.
4. Weinberger MM, Bronsky EA, Evaluation of oral bronchodilator effect in asthmatic children, J Pediatr 84:421-427, 1974.
5. Mitenko PA, Ogilvie RT, Rational intravenous doses of theophylline, NEJM 289:600-603, 1973.
6. Avner S, Beta-adrenergic bronchodilators, Pediatr Clin N. Am 22:129-139, 1975.
7. Barry WH, Mortorano F, Cotton EK, Management of life threatening asthma with intravenous isoproterenol infusions, Am J Dis Child 130:39-46, 1976.
8. Berman BA, Fenton MM, Girsh LS, Haddad ZH, Sellars WA, Strem EL, Thompson HC, Wall LE, Cromolyn Sodium in the treatment of children with severe, perennial asthma, Pediatrics 55:621-629, 1975.
9. Godfrey S, Konn P, Suppression of exercise-induced asthma by salbutamol, theophylline, atropine, cromolyn and a placebo in a group of allergic children, Pediatrics 56:130-134, 1975.
10. Chai H, Newcomb RW, Pharmacologic management of childhood asthma, Am J Dis Child 125:757-765, 1973.
11. Lovera J, Cooper DM, Collins-Williams C, Levison H, Barley JD, Orange RP, Clinical and physiological assessment of asthmatic children treated with beclomethasone dipropionate, J Allergy Clin Immunol 57:112-123, 1976.
12. Rachelefsky GS, Coulson A, Siegel SC, Stiehm ER: Aspirin intolerance in chronic childhood asthma: detected by oral challenge, Pediatrics 56:443-448, 1975.

GOLD THERAPY IN JUVENILE RHEUMATOID ARTHRITIS

CLIFFORD DEBENDETTI, M.D.
HAROLD TRETBAR, M.D.
JAMES J. CORRIGAN, JR., M.D.

INTRODUCTION

Rheumatoid Arthritis (RA) is a multisystem disease, of unknown etiology, whose natural course is one of spontaneous exacerbations and remissions. In contrast, to adult RA, children with this disease have a greater incidence of extra articular manifestations, such as fever, rash, iridocyclitis, pericarditis, lymphadenopathy, and hepatosplenomegaly. In addition, children rarely have subcutaneous nodules and positive tests for Rheumatoid Factor. It is estimated that 350,000 children are affected with Juvenile Rheumatoid Arthritis (JRA) in the United States and JRA is a leading cause of childhood crippling.

Because JRA may be difficult to diagnose and treat, a comprehensive out-patient clinic was founded in 1972. It is sponsored by the Southwest Chapter of the Arthritis Foundation and the College of Medicine, Department of Pediatrics. The problems of the arthritic child are approached in a multidisciplinary manner with a staff that includes a Rheumatologist, a Pediatrician, an Orthopedic Surgeon, a Physical Therapist, and a Medical Social Worker. The majority of patients referred have JRA.

Conservative management of JRA starts with therapeutic amounts of salicylates, regular physical therapy, and appropriate rest. These basic factors are successful in controlling symptoms in factors are successful in controlling symptoms in the majority of patients. However, for those patients with arthritis unresponsive to the basic program, the choice of the next drug is often difficult. In adults the non-steroidal anti-inflammatory agents may be used when this state is reached, but most are not approved for use in children.

The oral corticosteroids, unfortunately, are probably the most widely used drugs in JRA when salicylates have failed. The serious side

From: Section of Pediatric Rheumatology, Depart. of Pediatrics, the Depart. of Internal Medicine and the Depart. of Pharmacology, University of Arizona College of Medicine, Tucson, Arizona. (Dr. DeBenedetti, Fellow in Clinical Pharmacology and Pediatric Rheumatology; Dr. Tretbar, Associate, Internal Medicine; Dr. Corrigan, Professor of Pediatrics.) Reprint requests to CD, Department of Pediatrics, Arizona Medical Center, Tucson, Arizona 85724.

Supported in part by PHS Grant No. 5 T/2 GM00071-02.

effects of systemic steroids in long term treatment should limit their place to disease that poses a threat to life or vision.[1] Certainly, severe myocarditis, pericarditis, or iridocyclitis are indications for corticosteroids, but too often patients are begun on steroids before an adequate trial of aspirin.

There is a definite increase in mortality rate in JRA patients treated with steroids;[2] most deaths are caused by infection. Although patients will feel better with steroids, these drugs may not stop the progression of the arthritis. The side effects of growth retardation, peptic ulcers, compression fraction of spinal vertebrae, hypertension, acne, glaucoma, cataracts, and striae, make this treatment one to be used only if indicated.

The treatment of RA with gold salts (chrysotherapy) has been practised since the 1920's. At that time it was known that gold was bacteriostatic in vitro for the tubercle bacillus. Since RA was felt to represent an infectious disease, clinical trials were undertaken which seemed to show definite improvement in patients treated with gold. During the 1940's and 1950's controversy raged about the true efficacy of gold on the clinical course of RA. It was not until the double blind controlled study of the Empire Rheumatism Council was published in 1960 that statistical evidence confirmed the beneficial effect of gold.[3] Since that report other double blind controlled studies suggest that gold actually arrests and reverses the radiographic progression of bony destruction.[4,5]

Because of the lack of published data on gold therapy in JRA, we reviewed the records of 14 patients on chrysotherapy at the Tucson Children's Arthritis Clinic. The data will show that chrysotherapy is well tolerated and effective in a significant number of patients unresponsive to aspirin alone.

MATERIALS AND METHOD

Fourteen of the 40 children currently being followed in the Arthritis Clinic have been treated with gold salts. The mean age at onset of disease in the 14 children was 6 years and the mean age at start of gold therapy was 9 years. The type of onset was Acute Febrile in 6 patients, Polyarticular in 5 patients, and Pauciarticular in 3 patients. The age range of the patients treated was 2 1/2 to 13 years. There were 8 females and 6 males. All patients were maintained on salicylates during treatment. In addition, 5 patients were on corticosteroids at the beginning of treatment or during the course of treatment. All patients had initial urinalyses, CBC, and BUN. A urinalysis was done with each injection and complete blood counts every 2 to 4 injections. Patients were questioned about the presence of pruritis, skin rash, mouth ulcers, and metallic taste at each visit.

Both Sodium Aurothiomalate 50% aqueous solution (Myochrysine) and Gold Thioglucose 50% oil suspension (Solganol) were used. The gold was given by deep intramuscular injections. The first two doses were 5 or 10 mg test doses. The usual weekly dose was calculated at 1 mg/kg. The number of doses was gradually reduced to one dose every two weeks, and if tolerated, to one every month. The gold was temporarily discontinued if dermatitis occurred until the condition cleared. Therapy was then reinstituted with lower doses.

RESULTS

The mean duration of treatment was 143 weeks with a range of 12 to 397 weeks. The mean number of injections was 93 with a range of 11 to 211. The mean total dose of gold was 3300 mg with a range of 210 mg to 10,065 mg.

Eight patients were treated with Solganol only, and one patient with Myochrysine only. Five patients were on Myochrysine originally and changed to Solganol during the course; one of these because of rash and 4 because Solganol doesn't sting as much.

Six patients had definite improvement in signs and symptoms of arthritis. Six of the fourteen had reduction of erythrocyte sedimentation rate to normal. There was, however, no definite correlation of improvement with total dose or duration of therapy. Relation of improvement to type of onset did not reflect any trend. (See Table I.) Three of the 6 patients with Acute Febrile onset improved as reflected by ESR returning to normal and no inflammed joints. Three of 5 with Polyarticular and 2 of 3 patients with Pauciarticular improved.

Table I
RELATION OF IMPROVEMENT TO TYPE OF ONSET

	Patients	with normal ESR and no acute joint findings
Systemic JRA	6	3
Polyarticular	5	3
Pauciarticular	3	2

Table II

SIDE EFFECTS OF GOLD THERAPY

Side Effect	No. of Patients
Rash	3 - 1 pt. only if > 10 mg/wk 1 pt. continues therapy with no recurrance of rash 1 rash questionably related to gold therapy
Renal	3 - 2 × proteinuria on 2 occasions No hematuria or elevated BUN
Bone Marrow Depression	0

Dermatitis occurred in 3 of our patients. Upon discontinuation of gold therapy the rash cleared in all 3 and subsequent reinstitution of therapy was possible in 2. None of our patients had any hematologic side effects such as anemia, leukopenia, thrombocytopenia, or bone marrow failure. None of the 14 patients had evidence of significant renal toxicity. No patient developed elevated BUN or creatinine; none had gross or microscopic hematuria; no patients had greater than 2+ proteinuria at any time during treatment. Three patients had 2+ proteinuria on two occasions. (See Table II.)

DISCUSSION

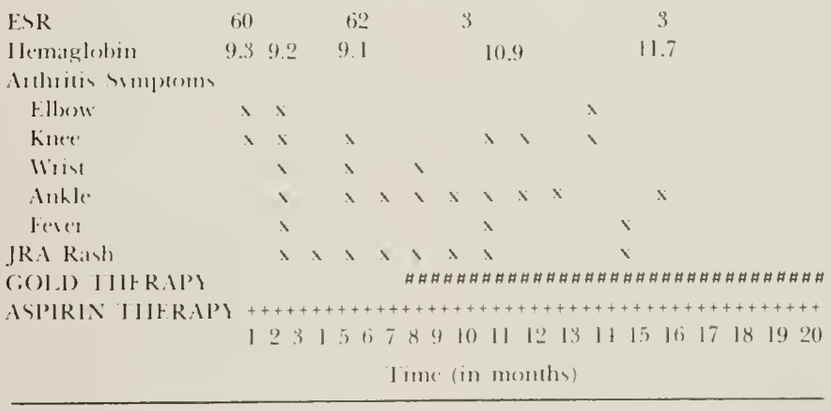
Chrysotherapy has been shown to be effective in inducing remissions or slowing progression of disease in up to 70% of adults with RA.[6] Oral absorption of gold compounds is so poor that it must be given by intramuscular injection. Injected gold is deposited in all body tissues. The lymph nodes show the highest concentrations, followed by adrenals, spleen, liver, and bone marrow. The articular tissues show relatively low concentrations of gold compared to the organs of the reticuloendothelial system, which may support the theory that the action of gold is in a site distant from the joints.

The mechanism of action of gold remains uncertain although it is known to affect multiple steps in the inflammatory process. Onset of inflammatory effect is delayed and good clinical response may not be seen for several months after onset of therapy. (See Table III.) The major part of each dose is excreted by kidney and feces and a substantial amount is deposited in tissues and excreted over long periods of time.

The inconvenience of frequent injections and the frequency of undesireable side effects have been the greatest barrier to more widespread use of gold therapy. Up to 30% of patients receiving gold may develop side effects. A skin rash may be transient and resolve with temporary suspension of therapy. However, the potentially serious side effects of exfoliative dermatitis, severe leuko-

Table III

PATIENT B.F.: RESPONSE TO GOLD



penia, thrombopenia, and nephrotic syndrome require that the patient be followed regularly by a physician experienced with this form of therapy.

Gold should be added only to a basic program of aspirin and physical therapy. Gold is indicated when a child with chronic, progressive arthritis is unresponsive to adequate trial (minimum of 2 months) of salicylates. Chrysotherapy can effectively suppress inflammation, but it will not reverse far advanced joint narrowing or reduce subluxations. Its proper place is early in the course of JRA, not after long standing arthritis has destroyed the joint.

This form of therapy requires close cooperation between family and physician. It should not be contemplated in those patients who show poor compliance with more conservative treatment programs. Also, because this is a disease of spontaneous remission, it should not be started before a comprehensive program of aspirin, physical therapy and rest has been given adequate chance.

The data from our center show that chrysotherapy can effectively suppress signs and symptoms of inflammation and is well tolerated over prolonged courses of therapy. The patients in our series were treated with large cumulative doses over prolonged periods and tolerated therapy quite well. The incidence of minor side effects were comparable to that in adults. While chrysotherapy should not be instituted before much consideration for the individual child and his family, we do feel that it allows us to refrain from steroids and in many instances to reduce steroid dosage.

REFERENCES

1. Calabro JJ, Management of juvenile rheumatoid arthritis. J Pediatr 77:355-365, 1970.
2. Ansell BM, Still's disease. Progress in Clinical Rheumatology, 1965, pp. 95-113.
3. ERC. The research subcommittee of the ERC: Gold therapy in rheumatoid arthritis: Report of a multicentre controlled trial. Ann Rheum Dis 19:95-117, 1960.
4. ARA cooperative clinics committee: Controlled trial of gold salt therapy in rheumatoid arthritis. Arth & Rheum 16: 353, 1973.
5. Sizler, et al, Gold salts in treatment of rheumatoid arthritis. Ann Int Med 80:21, 1974.
6. Harth M, Gold salts for rheumatoid arthritis. Drug Therapy, July 1975, pp. 162-165.

COPING WITH THE DISTURBING PATIENT

RUSSELL D. MARTIN, M.D.

ABSTRACT

The nonpsychiatrist who must deal with those disturbing patients who present as psychiatric emergencies will do so more competently if he adopts useful attitudes about these patients and the primary physician's role in dealing with them. Understanding why these patients disturb him and knowing some measures for reducing his disturbance will also enable the primary care physician to deal more effectively with these patients. Management of assaultive/combative, anxious, suicidal/depressed, and organically impaired patients is discussed as well as the physician's responsibility to others involved with the disturbing patient.

I. Useful Attitudes

Certain attitudes are helpful to the nonpsychiatrist as he considers himself in relationship to those disturbing patients who present a psychiatric emergency.

Primary care physicians must deal with psychiatric problems from the mildest to the most severe. This is proper for the basic principles of immediacy, proximity, and expectancy[1] dictate that the patient should be seen immediately in his own community with the expectation that he will be able to resolve his crisis and continue coping with his life's problems.

Dr. James Hodge[2] urges the general physician to adopt the following attitudes:

> "Patients with mental illness, major or minor, are . . . suffering and . . . are attempting to cope with problems of living.

From: Psychiatry Service, Tucson Veteran's Administration Hospital and the Depart. of Psychiatry, University of Arizona College of Medicine, Tucson, Arizona (Dr. Martin, Assistant Professor of Psychiatry and Chief, Psychiatry Service, Tucson Veteran's Administration Hospital). Reprint requests to RDM, Department of Psychiatry, Arizona Medical Center, Tucson, Arizona 85724.

They have a right to be treated with dignity and concern . . .

The diagnosis and treatment of mental illness are medical problems. The patient has a right to be in the doctor's office and to receive competent medical care. All patients with psychiatric problems do not require the specialized care of the psychiatrist . . ."

The primary care physician will begin to provide better emotional support for his patients when he is at ease with the attitude that he can and should provide assistance to his disturbing patients.

II. Sources of Disturbance in the Physician

The problem with disturbing patients is that they are, of course, disturbing. Some are bizarre in their behavior and hence alien. Others are provoking because of their direct animosity toward us. Dr. Mark Rein, Director of the Emergency Psychiatric Services at Colorado General Hospital, points out that:

"Two types of patients . . . are notorious for the real anger they can provoke in physicians . . . A man or woman whose days are filled with patients who would give anything not to be sick often resents the alcoholic or suicidal person as someone . . . who's inflicted this illness on himself."[3]

There are also deep-down fears of becoming insane or becoming homocidal or suicidal that can be aroused within us by some patients which creates considerable problems in our being objective.[3]

Often society brings unwilling patients to physicians with the expectation that the physician will deal with the disturbing behavior, and the physician's feelings of having the patient "dumped" on him is often more disturbing to him than the patient himself.

III. Measures for Reducing The Physician's Disturbance

In addition to maintaining awareness of some of the sources of our disturbance, there are some approaches which can help both the physician and his patient deal with the crisis at hand.

What a patient expects is that you will be able to help him cope a little better. The patient does not, and the physician should not, expect the physician to solve the patient's real problems nor erase his grief, pain, or fears.

Clarify who is disturbed. Frequently, you will find yourself confronted by those disturbed by the designated patient who are urging you to "do something." In all such instances, one is well advised to regard whoever you are dealing with as a patient at that moment. It may well be that your informant, with support, can more appropriately deal with the designated patient than you can, or it may become apparent that the problem is not so much acute in the patient as it is in the disturbed others.

Remember that the central feature of psychiatric crisis is that the patient is in a "jam" due to some upset in his usual equilibrium and a breakdown in his coping mechanisms and that every patient has recuperative powers which will begin exerting themselves with containment of the emergency.[4]

Finally, and this is often the most difficult, remain emotionally disengaged from the patient's disturbing behaviors. Remember, when you are in the sway of feelings, whatever they may be, you're sharply limited in your choices of response to the person creating those feelings in you. One way to help yourself maintain disengagement is to evaluate the patient's disturbing behaviors in the same way you would evaluate other medical symptoms. For instance, rather than expressing counter anger or defensiveness at an angry, vituperative patient's behavior towards you, you can observe that his behavior must be a problem for him and inquire about its frequency, its effect on his adjustment, what brings it on, how long it lasts, and so on. Such an approach not only allows you to protect yourself from nontherapeutic and ennervating emotional engagement, but it may be the first step, and often a powerful one, towards isolating the patient from his behavior so that he may identify himself as a person with a symptom, e.g.

his angry behavior, which can then be dealt with, rather than as an angry person whose feelings and behavior are an inseparable and immutable part of self.

IV. Methods For Reducing The Patient's Disturbance

A. Assaultive/Combative Patients

The combative or assaultive patient is frightened and trying to prove that he is not helpless and inadequate to handle his "jam." He frequently is also frightened by his loss of control. Any sense by him that those around him are also afraid and not able to control him will increase his fear, but he will correctly interpret blustering authoritarianism as an expression of fear and as an attempt to make him feel helpless and may rebel against being made to feel helpless by becoming more assaultive.[5]

In dealing with such patients, one strives for time for the person to calm himself and control his impulses. Most such patients will be searching for ways to salvage their self-esteem. A calm, slow review of the provoking situation with the consideration of alternative courses of actions, and a dispassionate consideration of the consequences of his behavior often suffices to defuse the situation.

One should also speak from the basic assumption and expectation that the patient will control himself. Patients, no matter how psychotic, often live up to our expectations, for good or for ill.

Avoid cornering a patient, either physically or in terms of his choices of behavior. The interview should be conducted in a setting which allows either the patient or the physician to leave the area without restriction. In the event that verbal methods are not sufficient and physical controls are required, always ensure sufficient help. At least four persons are required to properly restrain a person without injury, but more help is desirable for in most cases a "show of force" is sufficient to convince the patient of the wisdom of accepting restraints. It is very important at this stage that you maintain your communication with the patient about what you are doing and why.

Physical restraint can often be avoided if one is able to pursuade the patient to accept medication designed to help him calm down, become less frightened, and more able to accept help. One effective agent is halperidol 5 mgs intramuscularly, repeated at 30 minute intervals until the patient is calm.[6,7,8]

Agents which should not be used, but often are, are the benzodiazepines. At low doses, they are disinhibiting agents which may make matters worse. They are absorbed slowly and irratically when given parenterally. They are slowly metabolized resulting in long periods of sedation if given in large doses, and they are, of course, not antipsychotic agents.[9,10]

B. Anxious Patients

For the nonviolent but panic-stricken patient who is suffering from anxiety, the benzodiazepines are the agents of choice, as they are in patients who are intoxicated or who are delirious. In such cases, 50 to 100 mgs of oral chlordiazepoxide, which will give a peak blood level in 4 hours, or 10 to 30 mgs of oral diazepam, which will give a peak blood level in 2 hours, will usually suffice for initial medication to be followed by additional medication, the dosage depending on the patient's response. Keep in mind, however, that a steady state concentration on any regular dosage of benzodiazepines will not be reached for 5 to 10 days.[9,10]

C. Suicidal/Depressed Patients

Assume that all depressed patients are suicidal until evaluation demonstrates otherwise. In evaluating the depressed patient, be very open about his suicidal potential. Has he thought about it? Does he have a specific plan? Has he taken steps in preparation? Does he have a lethal means? Has he made an attempt? Remember that action (attempting suicide or making preparatory steps) is much more serious than thoughts.[11]

The decision against hospitalization may be one of the most difficult of decisions, especially following treatment of an attempt. Continued threats of suicide, the presence of psychosis, clinical depression, a highly lethal attempt, or the absence of a supportive social network usually warrants hospitalization. One does not ask the depressed patient if he wants hospitalization, one firmly informs him he is being hospitalized. These indecisive patients often cannot make the positive decision to accept hospitalization. Only if the patient makes a firm decision not to be hospitalized does the issue of voluntary versus involuntary treatment arise, and this usually does not occur since patients are generally looking for controls even if unable to directly request them.

For the patient you elect to not hospitalize, there are some things you can do to support the patient and lessen suicidal risk. One is to give him a definite appointment to be seen. Do not

tell him to call for an appointment. You should make whatever appointment he needs and tell him when he is to be seen. This gives the patient an anchor to the future and a clear suggestion that he will cope and live until that time. You should also provide him with your telephone number and assure him that he may call anytime, day or night, if he feels he cannot control his self-destructive impulses.

Tricyclic antidepressant medication with an explanation of its delay before effectively elevating mood should be given but not more than an initial two or three day supply. After a week of regular usage, a week's supply may be prescribed. The rule of thumb estimation of a life threatening overdosage of tricyclic antidepressant is 10 times the patient's average daily dose. Don't hesitate to use adequate dosage of these agents, and 200-300 mgs of imipramine may be the appropriate eventual dosage established over the course of a few days of increasing dosage. Tricyclics are not going to be useful, however, in treating the suicidal patient who is not clinically depressed.

It should be clear to everyone involved that the patient can always commit suicide and that nobody can really prevent that if he is determined to destroy himself. The helping professions can only assist him in controlling the impulses and in finding alternative solutions to his "jam." Actually, the idea that suicide is always available as a last resort can be a supportive idea to which a desperate person can cling as he tries to resolve his current situation.

D. Organically Impaired Patients (Acute and Chronic Brain Syndromes

Of course, medical evaluation for underlying medical problems is imperative. The intoxicated person may be intoxicated, but he may have serious medical problems. He may also be using alcohol as a drug to control his psychosis.

The "drunk" is probably the most common of disturbing patients. He is suffering from an acute brain syndrome and sedation. Management consists of allowing him to remain alert and walk around if not too destructive. If allowed to talk and to "save face" with rationalization, his extreme behavior may be short-lived.

Patients with chronic brain syndromes suffer from general emotional incontinence and may be transiently aggressive. These outbursts are often short-lived if no issue is made of the cause of his anger and if he is allowed to ventilate about it.[12] These patients often suffer from relative sensory isolation due to poor sight and/or hearing and a diminished capacity to make sense out of their perceptions. They will, therefore, become more confused or disturbing when in a novel setting such as when hospitalized or when discharged to home or a nursing home until their surroundings become familiar. They are usually worse at night when orienting stimuli are minimal or when mildly sedated with its further impairment of perceptual integration. Any provision you can make to increase the patient's ability to orient himself will be helpful. Such elements as lighting his room at night, introducing yourself everytime you approach him, telling him where he is when he awakens, and providing frequent contact with familiar people will be helpful.

Remember that depression is frequent in organically impaired persons, and the patient's apathy and withdrawal may simulate dementia of a much greater degree than is, in fact, present from an organic basis.

VI. Attending To The Patient's Milieu

Disturbing patients have surely been disturbing others, generally considerably more than they have you, and others are often in considerable need of recognition of their own fears, guilts, and concerns. They deserve explanations of your assessment and plans for the patient and should be consulted and involved in them as much as you appropriately can within limits determined by your need to protect the patient's confidentiality and your estimation of the intentions of the involved others toward the patient. They, ultimately, after all, will be the ones who continue living with the patient and his disturbances, real or potential.

REFERENCES

1. Hausman W, Rioch D, Military Psychiatry. Arch Gen Psychiat 16:727-739, 1967.
2. Hodge JR, Any doctor can. Medical Times 100:77-81, 1972.
3. Editorial: The breaking point. Emergency Medicine 6:24-40, 1974.
4. Hankoff LD, Emergency psychiatric treatment. Springfield, Ill., Charles C. Thomas, 1969.
5. Hodge JR, How to handle a psychiatric emergency. Medical Times 101:167-175, 1973.
6. Man Pang L, Chen CH, Rapid tranquilization of acutely psychotic patients with intramuscular haloperidol and chlorpromazine. Psychosomatics 14:59-63, 1973.
7. Thornton WE, Thornton BP, Crises psychopharmacology techniques. Diseases of the Nervous System 35:32-34, 1974.
8. Reschke RW, Parenteral haloperidol for rapid control of severe, disruptive symptoms of acute schizophrenia. Diseases of the Nervous System 35:112-115, 1974.
9. Greenblatt DJ, Shader RI, Benzodiazepines. NEJM 291:1011-1015, 1974.
10. Greenblatt DJ, Shader RI, Benzodiazepines. NEJM 291:1239-1243, 1974.
11. Solomon P, Patch VD, Handbook of psychiatry. 3rd Edition, Lang Medical Publications, 1974.
12. Freedman AM, Kaplan HL (ed), Comprehensive textbook of psychiatry. Williams and Wilkins, 1947.

NATIONAL MEDICAL SERVICE NEW ZEALAND STYLE

JOHN W. KENNEDY, M.D.

If you are a resident of the agrarian country either of the slow paced South Island with the snow covered Southern Alps or the less, rugged North Island still rich in Maori artifacts and people, in either area you may have the best or worse of two medical delivery systems.

First of all the federal income tax sops up about one-third of your earnings. This supports the National Health Service, schools, unemployment insurance, university tuition for your children, (if they can pass entrance examinations) disability compensation, and retirement benefits.

Along with "unlimited hospital care" office visits to the physician are paid to the doctor $3-$4 per visit, patients must add $1.75 per visit up from 75¢ when the system started in 1940. Even so, the National Health System costs are going "out of sight."

Now why would anyone, who must pay for it anyway, wish not to receive all his medical goodies from the prepaid benevolent bureaucratic system. The reason is as old as the failure of the wheat dole, by the Roman Senate, to placate the populace. Time needed to deliver. Elective surgery, such as hernia, varicose veins, hysterectomy, these and dozens of other non-emergency procedures may require a waiting period of 2-3 years.

It should be stated here that there are three types of hospitals, public or we would term them county, city, veterans etc. manned by fulltime and parttime, government paid doctors who also have their own private practice, generalists and specialists.

Two other types of nongovernment owned hospitals operate; nonprofit, usually church sponsored and proprietary hospitals, run for profit.

Part of the hang up seems to be that while you might be advised by a surgical specialist that the waiting period for a hernia is two years, if you wish to pay your way he will do it next week in a private hospital!

Thus, more and more New Zealanders opt for private health insurance, in spite of the fact they are levied their share to support the National Health Service bureaucracy.

(Don't laugh—how much of your income have you retreived which went to HEW, foreign aid, moon shots and innumerable other bureaucratic goodies—U.S. style?)

This conflict of interest is scarcely admitted by "private" physicians who are also government paid for work in the "public" hospitals and is alluded to rather apologetically by "full time" physicians in public hospitals. If you need a total hip replacement you may be advised that the waiting period at Christ Church Public Hospital is 6 to 12 to 36 months, but the same specialist may be available next week, down the street in a hospital where he does private practice, to make the hip replacement. Various interpretations are given for this arrangement not all of them complimentary to the private practitioner.

But have no fear, the National Health Service of New Zealand will still allow $12 per day toward your hospital day charges, you pick up the balance which might be another $12—plus

Editor's Page

EDITOR-IN-CHIEF
John W. Kennedy, M.D.*
ASSOCIATE EDITOR
William B. McGrath, M.D.*
EDITORIAL ASSISTANT
Joan Bruner

EXECUTIVE DIRECTOR AND MANAGING EDITOR
Bruce E. Robinson

EDITORIAL BOARD

William E. Crisp, M.D.*
Walter V. Edwards, Jr., M.D.*
Warren Gorman, M.D.*
John R. Green, M.D.*
John F. Kahle, M.D.*
Gerold Kaplan, M.D.*
George Lastnick, M.D.*
Stanley H. Nordmo, M.D.*
Edward Sattenspiel, M.D.*
Michael L. Schreiber, M.D.*
Murray Spotnitz, M.D.*
Donald J. Ziehm, M.D.*

*Publishing Committee

the surgeons fee, this will apply when you opt for a private hospital and physician.

Now if you are properly confused, hold tight, the New Zealanders have, what appears to be, the best answer to medical and surgical misadventure. (Please not malpractice, that's a no-no word.)

Supposing despite the best of medical and surgical attention, you suffer a medical misadventure. Your case is immediately referred to an arbitration board of three members, one a physician. If they accept your claim as valid you are placed on temporary or permanent disability compensation depending on the nature of your misadventure. This has been in operation only two and a half years. So far 98% of claims have been so settled.

This same sort of disability compensation and free medical therapy is apparently applied not only to all industrial accidents, as we are familiar with, but any other accident, sporting, skiing, falling down stairs stoned, all are given free medical care and may be conpensable as long as you are unable to resume your work.

This arbitration of malpractice claims does not preclude your bringing suit in the courts. As I understood, in the 2 1/2 years it has been in operation no suit had been successful.

Here in the U.S. this idea of compulsory arbitration is appealing, one or two states have made an attempt to use it. The legal profession can be, counted on to mount a frontal "constitutional" assault. Millions for constitutional rights, not one cent for sane solutions.

Clinical Oncology In Arizona

CANCER CHEMOTHERAPY: THE PRIMARY PHYSICIAN'S ROLE

RICHARD E. LLOYD, M.D.

Editors: Sydney E. Salmon, M.D., Professor and Head, Section of Hematology and Oncology, University of Arizona College of Medicine, Tucson, Arizona 85724; Robert H. Thoeny, M.D., Dir., Radiation Oncology, Good Samaritan Hospital, Phoenix, Arizona 85006; Darwin W. Neubauer, M.D., General Surgeon, 720 Country Club Road, Tucson, 85716.

The relatively new, rapidly evolving field of cancer chemotherapy can be confusing to the physician not intimately involved with it. A multitude of unfamiliar, toxic drugs are employed, often in combination. New agents, often with unusual toxicity, are rapidly introduced into standard clinical practice. A variety of relatively uncommon diseases are being treated and the results of therapy are often reported in a confusing fashion. I wish to clarify the role of chemotherapy in the management of the cancer patient, and to discuss the means by which currently optimal and appropriate drug therapy can best be delivered to the patient. This requires the cooperative interaction of the patient, the primary care physician, and a consultant with special skills and knowledge of the drug therapy of neoplastic diseases.

The choice of therapy for the patient with cancer (be it surgery, radiotherapy, chemotherapy, immunotherapy, or a combination of these) is dependent upon knowledge of the type of cancer (cell type and tissue of origin), location, and extent. The importance of a firm pathologic or clinical diagnosis prior to institution of any potentially injurious therapy is as important in the setting of recurrent or metastatic disease as in a primary lesion. Chemotherapy, as usually applied, is a systemic mode of therapy most appropriate for disseminated meta-

From: Section of Hematology and Oncology, Department of Internal Medicine, University of Arizona College of Medicine, Tucson, Arizona 85724 (Dr. Lloyd).

static disease or local disease incurable by surgery or radiotherapy. In addition, increasing and appropriate attention is being given to the patient at risk of having subclinical microscopic foci of disease following initial surgical or radiotherapeutic procedures, and chemotherapy is being employed "early" as adjuvant therapy with curative intent.

As with other modalities, chemotherapy can have either curative or palliative potential, and an understanding of the goal of therapy in a particular case is necessary for both the physician and the patient. Frequently, expectations will not be for "cure," and it is important to keep in mind our somewhat limited capabilities and our responsibilities to the patient, which are well expressed by the statement, "To heal sometimes, to relieve often, to comfort always." Clearly, the goals of therapy will influence the vigor with which chemotherapy is recommended and applied. However, the patient with incurable cancer should be regarded in the same light as other patients with chronic illness, and a positive, aggressive approach to the diagnosis and treatment of troubling symptoms should be adopted. This attitude and the knowledge that effective palliative therapy is available can be of great psychologic benefit to the patient with cancer, providing a sense of hope and allowing him to re-enter and enjoy life. This is a desirable aspect of chemotherapy and one to be fostered by the physician.

What can be accomplished with chemotherapy? Before discussing the goals of therapy in specific diseases I must caution against adopting a chemotherapy "cookbook" approach to the cancer patient. Individual evaluation is needed in each case, and the offered therapy must be appropriate for the patient, as well as for his neoplasm. Factors to be taken into account include the extent and tempo of progression of the cancer, the general physical status and age of the patient, the attitude of the patient to his disease and his future plans, his willingness to accept side effects of treatment, his socioeconomic status, the presence of other diseases, and the availability of supportive care facilities, if needed.

For the modest number of relatively uncommon neoplasms shown in Table 1, chemotherapy offers the potential for a normal life span.[1] Excluding skin cancer, these diseases comprise only 8% of neoplastic diseases. However, they frequently occur in young patients and it is critical that optimal therapy be offered. Intensive, highly toxic drug therapy is employed, and careful planning of the therapy and management of the frequent complications that result are necessary in these patients for whom the stakes are high.

Table 1

Cancers In Which Drugs Have Been Responsible For Some Patients Achieving A Normal Life Span

- Acute leukemia in children
- Hodgkin's disease
- Histiocytic lymphoma
- Skin cancer
- Testicular carcinoma
- Embryonal rhabdomyosarcoma
- Ewing's sarcoma
- Wilms' tumor
- Burkitt's lymphoma
- Retinoblastoma
- Choriocarcinoma

In a large number of advanced neoplastic diseases, as shown in Table 2, palliative drug therapy is of sufficient benefit to prolong survival in responding patients. For these patients it is important to offer effective therapy while at the same time minimizing toxicity to achieve as high a quality of life as is feasible. In general, for patients responding to therapy the benefits greatly outweigh the drawbacks of therapy. In adult acute leukemia the use of intensive therapy with new drugs and BCG immunotherapy after initial induction of complete remission is resulting in prolonged disease-free survival for some patients.[2] Whether a normal life span will result for these patients cannot be said at present; however, these results point out the progress that has occurred over a short time in the chemotherapy of malignant diseases.

Table 2

Cancers In Which Responders To Chemotherapy Have Had Demonstrated Improvement In Survival

- Ovarian carcinoma
- Breast carcinoma
- Adult acute leukemias
- Multiple myeloma
- Endometrial carcinoma
- Prostate cancer
- Lymphocytic lymphomas
- Neuroblastoma
- Adrenal cortical carcinoma
- Malignant insulinoma
- Central nervous system cancer
- Soft tissue sarcomas
- Oat cell carcinoma of the lung

A third group of cancers which are responsive to chemotherapy, but in which clear demonstration of prolongation of survival has not been demonstrated, is illustrated in Table 3. Some of these tumors are now responding to the extent that arguments against their inclusion in this group could be made. Osteogenic sarcoma is of particular interest. The use of massive doses of the antifolate drug methotrexate, or the use of adriamycin, produces objective response in 40% of patients with advanced metastatic disease. The use of these agents in the immediate postamputation period as adjuvant therapy directed at microscopic areas of disease has made a dramatic difference in the natural history of this disease. Whereas more than 80% of patients normally would have recurrence of disease within 18 months of surgery, in patients receiving combined drug therapy following amputation only 45% have shown recurrence within two years of surgery.[3]

Table 3

Cancers Responsive To Drugs But For Which Clinically Useful Improvement In Survival Has Not Been Clearly Demonstrated

Head and neck cancers
Gastrointestinal cancer
Endocrine gland tumors
Malignant melanoma
Malignant carcinoid tumors
Osteogenic sarcoma
Bladder carcinoma
Thyroid carcinoma
Cervical carcinoma

Finally, there remains a group of diseases for which drug therapy is poor, as shown in Table 4. For patients with these diseases, the physician must carefully weigh the potential physical and psychologic benefits of chemotherapy against the toxicity. For some patients it will not be appropriate to initiate therapy, particularly in the setting of advanced metastatic disease. This is not to say that the patient should be told "there is nothing that can be done." It is always possible to palliate symptoms, and the patient needs confidence that his physician views his problems as worth investigating and treating. In most instances, patients will wish to receive a trial of chemotherapy, even though fully informed about the toxicity of therapy and the remote chances of benefit. Occasional gratifying responses occur and justify the therapy of these malignancies in most individuals, with the understanding that therapy will be promptly discontinued if toxicity is excessive.

Table 4

Cancers Only Marginally Responsive Or Unresponsive To Chemotherapeutic Agents

Hypernephroma
Cancer of the esophagus
Epidermoid carcinoma of the lung
Pancreatic carcinoma
Hepatocellular carcinoma

Of increasing importance is the use of drug therapy as an adjuvant to surgery and/or radiotherapy.[4] The failure of surgery and radiotherapy to cure some patients results from the early occurrence of metastasis via vascular and lymphatic routes. Improved detection techniques may increase the number of localized tumors treated, but there will continue to be large numbers of patients who, at time of presentation, will have microscopic foci of disseminated cancer. With better chemotherapy available, attention has turned to the use of drugs as adjuvant to surgery or radiotherapy for treatment of microscopic foci of tumor. Information obtained in animal and human tumors indicates that such therapy has curative potential.[5] The results obtained in osteogenic sarcoma, as well as in Wilms' tumor, Ewing's sarcoma, and embryonal rhabdomyosarcoma illustrate the potential of adjuvant chemotherapy. The early results in breast cancer are encouraging as well.[6] Interest is also being given to the adjuvant therapy of lung cancer (especially oat cell carcinoma), thyroid cancer, colon cancer, head and neck cancers, melanoma, and ovarian cancer. For patients with these diseases, consideration should be given to adjuvant chemotherapy following the initial therapeutic procedures.

Before administration of any chemotherapeutic agent, detailed knowledge of the details of administration and toxicity is necessary in order to both anticipate and avoid toxicity and to inform the patient adequately about the agent he is to receive. Toxic effects common to many agents include nausea and vomiting, reversible bone marrow suppression (usually causing depression in granulocyte and platelet counts 10 to 14 days following therapy), mucous membrane toxicity (most marked for bleomycin, methotrexate, and 5-FU), and alopecia. Extravasation of some drugs causes severe local toxicity with

In general, the planning for and safe delivery of optimal, appropriate therapy is best achieved through cooperation between the primary care physician and a consultant skilled in chemotherapy. The initial goals of therapy can thus be carefully and realistically defined and a therapy course planned. The optimal therapy may, at times, include the use of investigational agents and usually these will be available to the consultant. Both the patient and the primary physician will benefit from the knowledge the consultant has regarding the toxic agents being employed. The potential need for specialized, supportive care (such as platelet or granulocyte transfusions) can be determined. Following initial evaluation it is quite feasible, and often desirable, for the primary physician to be largely responsible for the administration of therapy, as resulting ulceration and fibrosis. In addition to these common toxicities, there are toxicities specific for a given agent. Adriamycin and daunomycin cause myocardial fibrosis when given in high total doses. Bleomycin and busulfan cause pulmonary fibrosis after large doses. Vincristine and vinblastine are neurotoxic and cause peripheral neuropathy. Cyclophosphamide can produce hemorrhagic cystitis. Consideration must also be given to the method of drug disposition. Adriamycin is excreted in bile and, in the presence of liver disease, usual doses result in high blood levels and excessive toxicity. Methotrexate is excreted in the urine and renal function should be evaluated prior to its administration. Finally, the patient should be evaluated for factors which might lessen bone marrow tolerance of chemotherapy. These include age, prior radiotherapy or chemotherapy, and the presence of bone marrow involvement by cancer. Thus, detailed knowledge of the drug used and both its general and specific toxicity is needed to allow its safe use.

well as for the day-to-day management of the complex medical and emotional problems that confront these patients.

For a limited number of diseases it is probably not appropriate for the primary physician to attempt to manage chemotherapy. Acute leukemia is the major example where the need for special supportive facilities, detailed knowledge of the complications of therapy, and the management of infection in the granulocytopenic patient make primary management by a specialist mandatory. The current drug programs for testicular carcinomas, sarcomas, childhood neoplasms, breast cancer, and some lymphomas are sufficiently demanding that management by a skilled chemotherapist is appropriate.

There are tumors and situations in which drug therapy is unlikely to be of benefit. Frank discussion between the patient and the primary physician about the potentials and toxicity of chemotherapy may result in a mutual decision to forego chemotherapy or a visit to a consultant. Examples would be of metastatic lung carcinoma (other than oat cell), disseminated malignant melanoma, widespread gastrointestinal carcinoma, or metastatic disease with brain metastases not responsive to radiotherapy.

References

1. DeVita, V. T., Young, R. C., and Canellos, G. P. Combination versus single agent chemotherapy: A review of the basis for selection of drug treatment of cancer. Cancer 35:98-110, 1975.
2. Boday, G. P., Freireich, E. J., Gehan, E., McCredie, K. B., Rodriguez, V., Gutterman, J., and Burgess, M. A. Late intensification therapy for acute leukemia in remission. J.A.M.A. 235:1021-1025, 1976.
3. Sutow, W. W., Sullivan, M. P., Fernbach, D. J., Cangir, A., and George, S. L. Adjuvant chemotherapy in primary treatment of osteogenic sarcoma. Cancer 36:1598-1602, 1975.
4. Jones, S. E. Current status of adjuvant therapy. Ariz. Med. 32:636-638, 1975.
5. Schabel, F. M. Concepts for systemic treatment of micrometastases. Cancer 35:15-24, 1975.
6. Bonadonna, G., Brusamolino, E., Valagussa, P., Rossi, A., Brugnatelli, L., Brambilla, C., DeLena, M., Tancini, G., Bajetta, E., Musumeci, R., and Veronesi, U. Combination chemotherapy as an adjuvant treatment in operable breast cancer. N. Engl. J. Med. 294:105-410, 1976.

Seminars in Endocrinology and Metabolism

ACROMEGALY: "THE LONG AND SHORT OF IT"

GREGORY HERRING, M.D.

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

Acromegaly is a rare disorder which usually escapes detection until late in its course because of the subtle and slow nature of the changes it produces. In order to help the clincian recognize the disorder earlier, a review of the condition with newer insights into its pathophysiology and treatment should prove helpful.

The clinical presentation of acromegaly may be related to effects of growth hormone excess, disturbances in other hormones, or to the local effects of a mass lesion in the sella region.

Most obvious and well-known are the effects of excessive growth hormone on soft tissues and bone. Hand x-rays show cortical thickening and tufting of the tips of the distal phalanges. Increased ring and shoe sizes are classical complaints. The mandible increases in length and thickness, with a resulting overbite of the lower incisors. Overgrowth of the frontal, malar and nasal bones adds to the coarsening of facial features. Skull films show a thickened calvarium and enlargement of the frontal, mastoid and ethmoid sinuses. The skeleton shows generalized increased periosteal bone formation. Osteophyte formation on the epiphyses of long bones is common. Articular cartilage proliferates, but abnormal joint mechanics resulting from bony overgrowth may lead to severe osteoarthritis. Osteoporosis may result from accelerated reabsorption of bone.

Soft tissue changes in acromegaly include visceromegaly and thickening of skin and subcutaneous tissue. The skin becomes coarse with exaggeration of pores and increased hair growth. Sweating, oiliness, and pigmentation also increase. Skin tags multiply on some patients.

Increased connective tissue and interstitial fluid contribute to coarsening of facial features and to enlargement of hands and feet with increased heel-pad thickness. Entrapment of peripheral nerves by bone or soft-tissue overgrowth may cause paresthesias and a carpal tunnel syndrome. The nerves themselves may become enlarged with perineural and endoneural fibrous proliferation. resulting in peripheral neuropathy.

Muscle weakness is a common complaint in acromegaly, especially late in the disease. Pickett, et al[1] found a proximal myopathy in 8 of 17 patients, which improved after treatment of their acromegaly. Electromyelograms showed myopathic changes, but serum enzymes and muscle biopsies were usually normal.

Generalized visceromegaly is commonly seen in acromegalic patients, often more apparent at autopsy than on physical examination. The liver, spleen, pancreas, thyroid and parathyroids are larger than normal. The tongue may become large enough to protrude from the mouth.

Cardiomegaly out of proportion to enlargment of other organs is usually seen. In addition, acromegaly has been felt to carry an increased risk of cardiovasular disorders including hypertension, premature coronary artery disease, arrhythmias, conduction defects, and congestive heart failure. Some have postulated a specific

Reprint Requests: Marshall B. Block, M.D., 3411 North Fifth Avenue, Phoenix, Arizona 85013.

acromegalic cardiomyopathy. In 1975, Jonas, et al studied ten acromegalics without apparent heart disease.[2] Seven of the ten patients "demonstrated measurable and significant abnormalities in systolic time intervals", indicating that subclinical abnormalities in left ventricular performance are common in acromegaly.

Marked enlargement of the kidneys has been reported, with striking increases in glomerular filtration rate and tubular reabsorption of glucose.

Other effects of growth hormone excess include weight gain, hypermetabolism and glucose intolerance. Weight gain occurs in about 40% of patients. Most patients are in a hypermetabolic state as measured by basal metabolic rate, and about 25% of patients have a goiter, but direct measurements of thyroid function are normal. About 50% of acromegalic patients show mildly impaired glucose tolerance and 10% have clinical diabetes mellitus. Insulin levels are elevated, suggesting insulin resistance due to the direct competition of somatomedin (see below) with insulin for cell receptor sites.

Hypogonadism is the commonest associated hormonal distrubance seen in acromegaly. Decreased LH and FSH secretion, possibly due to a hypothalamic disturbance or to the local effect of an eosinophilic adenoma of the pituitary, results in menstrual irregularities in nearly all female patients and impotence in a third of male patients. Other pituitary hormone deficiencies are occasionally seen. Most acromegalic patients have high-normal serum prolactin levels, and some show mild to moderate elevations associated with galactorrhea. Rarely patients are seen with increased TSH or ACTH secretion resulting in clinical hyperthyroidism or Cushing's syndrome.

Acromegaly is commonly associated with pituitary tumors which may become large enough to exert a local mass effect in the sella turcica and on adjacent sturctures. As mentioned, normal pituitary tissue may become sufficiently compressed by an expanding adenoma to result in decreased trophic hormone reserve or frank insufficiency. ADH, being dependent on the posterior pituitary only for hormone storage, is rarely affected in the untreated patient.

The patient with an enlarging intrasella adenoma frequently complain of headaches, especially occipital headaches. Skull films usually show enlargement of the sella, sometimes with resorption of the anterior and posterior clinoid processes. In early cases where gross deformity is not present, tomography may reveal a small concavity of the sella wall caused by a "microadenoma". Adenomas which extend superiorly out of the sella may impinge on the optic chiasm causing bitemporal hemianopsia, which begins in the upper outer quadrants of the fisual fields. Continued pressure may lead to optic atrophy and complete blindness. Occasionally the third, fourth and sixth cranial nerves may be involved. If the tumor compresses the hypothalamus, the patient may suffer abnormalities of appetite, sleep, or temperature regulation, as well as uncinate seizures. Releasing hormone deficiencies are also a possible result of hypothalamic compression.

Rarely a large tumor will undergo partial or complete necrosis spontaneously. This phenomenon may explain the empty sella syndrome, in which air is seen in the sella turcica on pneumoencephalogram.

Hemorrhage into a sellar tumor may cause severe headache, sudden blindness, obtundation, hypotension, and hyperthermia (pituitary apoplexy). Rarely pituitary tumors may invade the circle of Willis, causing thrombosis or hemorrhage.

Classically acromegaly was felt to be due to autonomous secretion of growth hormone by a pituitary adenoma. More recent evidence suggests that the seat of the disorder may be in the hypothalamus or higher brain centers. In 1969, Cryer and Daughaday reported frequent GH determinations in three acromegalic patients.[3] The serum GH levels varied widely through the day. The normal spike on going to sleep was absent, and there was a response to stimulation with insulin-induced hypoglycemia and with arginine infusion. One patient showed a paradoxic GH rise with hyperglycemia. These findings led the authors to suggest that these acromegalic patients showed hypothalamic regulation of GH secretion, though serum growth hormone levels were almost continuously above normal. In 1970, Lawrence, Goldfine, and Kirsteins found similar responses to stimulation and suppression testing in fifteen active acromegalic patients.[4] They suggested that "in some patients this disease may begin as a primary hypothalamic distrubance with chronically elevated and inappropriate levels of growth hormone releasing factor ultimately resulting in hypertrophy and hyperplasia of growth hormone producing pituicytes and, in select cases, ultimate pituitary tumor formation". However, in 1975, Hoyte and Martin reported a patient whose

paradixical growth hormone response returned to normal after selective excision of a growth hormone secreting adenoma.[5] They concluded that their patient's primary disorder was in the pituitary gland rather than the hypothalamus. They stated that a rise in GH secretion with exogenous TRH and with LHRH suggested abnormal receptors on the adenoma cells. It is conceivable that acromegaly may be the end result of disease in both the hypothalamus and/or the pituitary gland. Further clarification awaits discovery of GHRF and its physiologic role in normal GH secretory dynamics.

Recent research has revealed that growth hormone does not exert its effects directly on target tissues, but stimulates production of a family of somatomedins, which are present in high concentrations in the serum of acromegalic patients. Discovered in 1957 by Salmon and Daughaday and termed sulfation factor, the somatomedins are being studies intensively.[6] The somatomedins are peptides of about 7,000 molecular weight, which resemble insulin closely in activity and cell membrane receptor specificity. They appear to be synthesized under GH control in liver and kidney and perhaps other tissues. Laron, et al, described a type of familial dwarfism clinically resembling hypopituitarism, but with elevated levels of GH. These patients have levels of somatomedin in the hypopituitary range, and these levels do not rise following administration of growth hormone.[7] Yalow, et al, reported a radioimmunoassay of somatomedin B one year ago.[8]

Another important link in the economy of growth hormone that is used in studying acromegaly is somatostatin or growth-hormone-release-inhibiting-factor, which presumably originates from the hypothalamus. Brazeau, et al, isolated and synthesized somatostatin in 1972.[9] The actions of somatostatin have been well-studied, but it remains to be shown whether it is a normal physioligic regulator of growth hormone secretion in man. Having a biologic half-life of only four minutes, somatostatin acutely and reversibly inhibits secretion (but not synthesis) of growth hormone. Somatostatin has also been found to inhibit the secretion of TSH under certain circumstances,[10] but not the secretion of LH or FSH. More surprisingly, somatostatin also acts on the alpha and beta cells of the pancreas in inhibit secretion of glucagon and insulin.[11] In addition, Bloom, et al, showed inhibition of gastrin release and gastric acid secretion by somatostatin infusion.[12] In acromegalic patients somatostatin suppresses growth hormone secretion rapidly and almost completely.[13] Efforts have been made to synthesize a long-acting preparation by complexing somatostatin with protamine zinc.

Adrenergic mechanisms have been found to be involved in the regulation of growth hormone secretion. Consequently interest has developed in characterizing adrenergic influences in acromegaly and investigating the use of adrenergic-related medications to treat acromegaly. Alpha-adrenergic mechanisms stimulate GH secretion in normal subjects.[14] Beta-adrenergic stimulation has been reported to suppress GH secretion. Apparently these mechanisms are also operative in acromegaly, because Cryer and Daughaday were able to suppress GH secretion in 7 of 10 acromegalic patients with infusion of the alpha-blocker phentolamine.[14] Further suppression occurred with addition of the beta-stimulator isoproterenol. They felt that all patients would have responded if the dose were adjusted according to body weight. Interestingly, L-DOPA, which stimulates GH secretion in normal subjects, was found to suppress GH secretion in acromegalic patients. Other studies have shown that these drug effects are medicated by the hypothalamus, rather than by the direct action of the pituitary gland.

Another line of investigation has shown involvement of serotonin pathways in GH secretion, and sefotonin antagonists, such as melatonin and cyproheptadine, blocked the GH release normally seen with insulin-induced hypoglycemia and exercise.[15] Whether the serotonin effect occurs at the level of the pituitary or the hypothalamus remains a subject of discussion and research. The role of adrenergic and serotoninergic mechanisms in the pathophysiology of acromegaly remains shrouded in darkness.

The suspicion that a patient may have acromegaly is aroused by recognizing the typical symptoms and signs mentioned above. However, documenting the diagnosis is sometimes complex. Careful evaluation of the patient is particularly important, since treatment of the disease is not uniformly successful nor free of complications. Evaluation should include characterizing the patient's pattern of growth hormone secretion, documenting the status of other hormones, and evaluating the anatomical extent of

the pituitary tumor.

The diagnosis of acromegaly hinges on establishing an abnormal pattern of growth hormone secretion. The pattern of GH secretion may vary widely among acromegalic patients. Blood levels may be only slightly elevated or massively so. Fluctuations through the day may be minimal or marked. Nearly all patients show absence of the normal sleep-related GH peak. Normally growth hormone secretion is stimulated by arginine infusion, insulin-induced hypoglycemia, and exercise; secretion is suppressed by hyperglycemia. These responses may be qualitatively or quantitatively altered in acromegaly.

Further complexity is introduced in diabetic patients in whom growth hormone levels tend to be elevated compared to normal controls. Their GH levels approach normal levels with strict control of blood sugar. The mechanism of GH elevation in diabetes is unknown.[17]

Patients with advanced acromegaly may suffer from partial hypopituitarism. Once the diagnosis of acromegaly is established, the patient should be evaluated for other associated endocrinopathies.

Pituitary tumors are included in the syndrome of multiple endocrine adenomatosis Type I (Wermer's syndrome). Other components of this syndrome include hyperparathyroidism and gastrin-secreting pancreatic tumors (Zollinger-Ellison syndrome). Acromegalic patient should therefore be screened for these abnormalities.

As a guide to therapy the anatomical extent of the patient's pituitary lesion must be determined. Studies should include formal visual field testing, skull films with tomograms of the sella, bilateral carotid angiography, and pneumoencephalography.

The ideal therapy for acromegaly should include a morbidity and mortality less than that of the untreated disease.

Efforts at treatment of acromegaly have included various methods of pituitary ablation by surgery or radiation therapy. Recently several medications have been investigated in an attempt to suppress growth hormone secretion. None of these methods has been 100% successful, and some of them are associated with significant complications and side effects.

Estrogens and progestins are among the medications used to treat acromegaly. Estrogens were advocated in the early 1940's. Recently estrogens have been shown to inhibit slightly the formation of somatomedin following GH administration,[20] but estrogens remain a marginal therapy of acromegaly. Progestins have also been advocated for acromegaly, but Malarkey and Daughaday in a study of 11 patients found lowering of GH levels in three patients and an elevation of GH levels in five patients.[21] Atkinson, Dimond, Howard, et al, also found medroxyprogesterone acetate unsuccessful in the treatment of acromegaly.[22]

Recently a dopaminergic agent, 2-bromo-alpha-ergocryptine (CB-154, Sandoz), has been under investigation. This drug tends to increase GH secretion in normals and depress secretion in acromegalic patients. In general the response to CB-154 has been sub-therapeutic, and vomiting has been a troublesome side effect.[23] Chlorpromazine has also been tried and found ineffective in the treatment of acromegaly. One drawback of all of these medical regimens is that suppression of GH secretion does not remove the threat of an expanding intrasellar lesion.

Radiation therapy includes conventional x-ray therapy and proton-beam irradiation. Some of the best results with x-ray therapy were reported by Lawrence, et al.[24] They were able to restore normal or near-normal plasma GH levels in 78% of a group of 28 acromegalic patients treated by radiation. Daughaday recommends use of x-ray therapy for young patients with small tumors and mild hypersomatotrophism as a first approach.[25]

Proton beam irradiation is felt to be somewhat more effective than conventional x-ray therapy, but it is also associated with a higher incidence of hypopituitarism and other complications. The latter have included cranial nerve palsies, chiasmatic injury, temporal lobe seizures, and vertigo. These complications may be late in onset and do sometimes clear with time.

Surgical approaches to acromegaly include transsphenoidal microsurgery, cryohypophysectomy, radiofrequency ablation, radioactive isotope implantation, and for larger tumors extending out of the sella, transfrontal hypophysectomy. The most recent approach is transsphenoidal microsurgery using an operating microscope to dissect out the adenoma and spare normal tissue.

One might expect that evacuation of the sella would reliably eradicate excessive growth hormone secretion. In fact, however, GH levels fell to less than 10 ng./ml. in only 76% of 50 patients

treated by cryohypophysectomy in the series of Levin, et al.[18] Others have had similarly frustrating results in some cases.[25]

Complications of surgery occur in ten to forty percent of cases and include cerebrospinal fluid rhinorrhea, meningitis, diabetes insipidus, optic damage and occasional deaths. Post-treatment hypopituitarism occurs in ten to thirty percent of cases.[19]

Indications for surgery include urgency for restoring normal GH concentrations rapidly, serious mass effects of the pituitary tumor, and failure of radiation therapy.

As with other diseases, florid cases of acromegaly present little difficulty in establishing a diagnosis. In the interest of preventing disfigurement, morbidity, and mortality, early diagnosis is every desirable, but may be difficult. The multiplicity of therapies used in treating acromegaly reflects the fact that none has proved wholly satisfactory. With greater study, perhaps a clearer understanding of the pathophysiology of the disease will emerge which will help us develop therapies to treat patients with this unusual but disfiguring disorder.

REFERENCES

1. Pickett, J. B. E., III, Layzer, R. B., Levin, S. R., et al., *Neurology* 25:638-645, 1975.
2. Jonas, E. A., Aloia, J. F., Lane, F. J., *Chest* 67:190-194, 1975.
3. Cryer, P. E., Daughaday, W. H., *J. Clin. Endocrinol. Metab.* 29:386-393, 1969.
4. Lawrence, A. M., Goldfine, I.D., Kirsteins, L., *J. Clin. Endocrinol Metab.* 31:239-247, 1970.
5. Hoyte, K.M., Martin, J.B., *J. Clin. Endocrinol. Metab.* 41:656-659, 1975.
6. VanWyk, J. J., Underwood, L.E., Listet, R.C., et al, *Am. J. Dis. Child.* 126:705-711, 1973.
7. Laron, Z., Pertzelan, A., Karp, M., et al, *J. Clin. Endocrinol. Metab.* 33:332-342, 1971.
8. Yalow, R.S., Hall, K., Luft, R., *J. Clin. Invest.* 55:127-137, 1975.
9. Brazeau, P., Guillemin, R., (edit.), *N. Engl. J. Med.* 290:963-964, 1974.
10. Lucke, C., Hoffken, B., Von-Zurmuhlen, A., *J. Clin. Endocrinol. Metab.* 41:1082-1084, 1975.
11. Ward, F.R., Leblanc, H., Yen, S.S.C., *J. Clin. Endocrinol. Metab.* 41:527-532, 1975.
12. Bloom, S.R., et al, *Lancet* 2(7889):1106-1109, 1974.
13. Yen, S.S.C., Siler, T.M., DeVane, G.W., *N. Engl. J. Med.* 190:935-938, 1974.
14. Cryer, P.E., Daughaday, W.H., *J. Clin. Endocrinol. Metab.* 39:658-663, 1974.
15. Smythe, G.A., Lazarus, L., *J. Clin. Invest.* 54:116-121, 1974.
16. Mims, R.B., Bethune, J.E., *Ann. Intern. Med.* 81:781-784, 1974.
17. Hansen, A. P., *J. Clin. Endocrinol. Metab.* 36:638-646, 1973.
18. Levin, S. R., Hofeldt, F. D., Schneider, V., et al, *Am. J. Med.* 57:526-535, 1974.
19. Nusynowitz, M. L. (edit.), *J.A.M.A.* 233:1302-13-3, 1975.
20. Wiedemann, E., Schwartz, E., *J. Clin. Endocrinol. Metab.* 33:424-431, 1971.
22. Atkinson, R. L., Jr., Dimond, R. C., Howard, W. J., et al *Acta Endocrinol.* (Kbh.) 77:19-25, 1974.
23. Summers, V. K., Hipkin, L. J., Divet, M. J., et al, *J. Clin. Endocrinol. Metab.* 40:904-906, 1975.
24. Lawrence, A. M., Pinsky, S. M., Goldfine, I. D., *Arch. Intern. Med.* 128:369-377, 1971.
25. Cryer, P. E., Daughaday, W. H., Coxe, W. S., et al, *Arch. Intern. Med.* 135:338-343, 1975.

Seminars in Chest Medicine

THE OFFICE MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

WILLIAM C. WEESE, M.D.

This continuing series of articles entitled "Seminars in Chest Medicine" will attempt to keep the reader abreast of developments in the broad field of pulmonary diseases. The format used will be that of brief succinct reviews written by the editors as well as guest contributors. Areas of controversy as well as practical chest medicine will be explored. We hope that these reviews will be of value in promoting continuing education for certification examinations as well as a forum for new and controversial issues. The editors welcome comments and discussion from our readers.

ROBERT J. CLARK, M.D.
LYNN M. TAUSSIG, M.D.
WILLIAM C. WEESE, M.D.

Chronic obstructive pulmonary disease (COPD), also called chronic obstructive lung disease (COLD), refers to a heterogeneous group of disorders with persistent irreversible obstruction to airflow through the lungs. As defined by the Committee on Diagnostic Standards of the American Thoracic Society,[1] COPD primarily encompasses two groups. *Chronic bronchitis* is a clinical disorder, characterized by excessive mucous secretion in the bronchial tree, present most days for a minimum of three months of each of two successive years; other pulmonary or cardiac diseases associated with sputum production must be ruled out. *Emphysema*, on the other hand, is a pathological definition; it is the abnormal enlargement of air spaces distal to the terminal nonrespiratory bronchiole, accompanied by destructive changes of the alveolar walls. There is also a rare type of hereditary emphysema, associated with a deficiency of serum alpha$_1$-antitrypsin; it is centrolobular rather

From: 2910 North Third St., Phoenix, AZ 85012

Table 1

Clinical Features Of Chronic Obstructive Pulmonary Disease*

	EMPHYSEMA	CHRONIC BRONCHITIS
Age	55 - 75	45 - 65
Earliest symptom	dyspnea	sputum production
Sputum appearance	scant, mucoid	copious, purulent
Chest roentgenogram**	hyperinflation	fibrotic changes
Chronic hypoxemia ($PaO_2 < 60$)	mild	often severe
Chronic hypercapnea ($PaCO_2 > 45$)	unusual	common
Erythrocytosis	unusual	common
Pulmonary artery pressure	slightly increased**	often very high
Cor pulmonale	unusual	common
COPD, type	A "pink puffer"	B "blue bloater"

*adapted from Burrows[2]
**may be normal

than panacinar in distribution. Although either the bronchitis or the emphysema may predominate, most COPD patient have elements of both.

While emphysema is defined anatomically, it is usually distinguished from bronchitis on clinical grounds. Table I contrasts features of the two extremes of a clinical spectrum. The chronic bronchitic is younger at time of diagnosis, complains primarily of sputum production rather than dyspnea, and has hypoxemia due primarily to marked ventilation-perfusion inequalities. In emphysema, units of ventilation and perfusion are more uniformly affected, resulting in a relatively normal PaO_2. As a consequence of hypoxemia in chronic bronchitis, erythrocytosis, elevated pulmonary artery pressure, and cor pulmonale may occur. The emphysematous lung with marked destruction of parenchymal lung tissue is readily distensible (high compliance), while the bronchitic lung is more stiff (low compliance).

Physical examination is not very helpful in the diagnosis of COPD. A "barrel chest" (increased anterior-posterior diameter) suggests advanced disease with resultant hyperinflation, but not uncommonly develops in elderly patients solely as a sign of aging. Clubbing without complicating carcinoma, bronchiectasis, tuberculosis, or lung abscess is very rare. History (especially productive cough or dyspnea) may suggest the diagnosis, though pulmonary function studies can document presence of COPD, even before symptoms develop, and quantitate its severity. Simple spirometry (vital capacity, $FEV_{1.0}$ [portion of vital capacity expelled maximally in one second], peak flow rate, lung volumes [vital capacity, residual volume, total lung capacity, and ratio of residual volume to total lung capacity] and arterial blood gases are available in most hospitals.

Treatment must be individualized, and is directed toward the following:

Patient education. Compliance to medical advice is facilitated when the patient and his family understand the disease process, goals of therapy, expected activity limitation, and need for medication. Frequently, the patient can help regulate the drug dosages and determine his exercise capacity. Confidence is needed in members of the health team and is aided by continual physician encouragement.

Bronchial hygiene. The chronic bronchitic must learn to handle his secretions more effectively by:

Avoidance of irritants. Cigarette smoking causes an irritative bronchitis, with increased sputum production and bouts of acute infection, paralyzes the rhythmic beat of cilia in the trachea, increases airway resistance, and lessens the taste for food. Its discontinuation helps

reverse these adverse effects. Certain occupations (e.g. coal mining, sandblasting, exposure to airborne dusts) are also best avoided. Occasionally, movement from relatively humid, air-polluted, and northern cities to more rural or dry environments is helpful.

Humidification and hydration. Adequacy of hydration is best assessed by the appearance of secretions. Thick sputum is difficult to expectorate, but can be more liquified with increased oral intake of fluids. Overhydration, however, must be avoided in the patient with borderline cardiac decompensation, frank cor pulmonale, on steroids, or with electrolyte imbalance. The nasal mucosa is nature's humidifier; in the patient with a permanent tracheostomy, supplemental humidification is essential to prevent crusting of secretions in the trachea. Ideal relative humidity of the ambient air is approximately 40%. In very dry months, supplemental moisture may be required.

Effective cough. Even in the intubated patient, nasotracheal suction only reaches the trachea and proximal portion of the mainstem bronchi. The cough maneuver (pent up pressure against a closed glottis) is essential to mobilize distal secretions. Not uncommonly a patient who denies sputum production will merely "clear his throat" without appreciating additional benefits of a deep cough.

Postural drainage. The inexpensive assistance of gravity is a contrast to the age of rising medical costs. Appropriate patient positioning effects drainage from each of the 18 pulmonary subsegments into the trachea. Vibration and percussion maneuvers facilitate dislodgement of secretions. Postural drainage, however, requires a concerted effort by the patient and often the spouse, as well as continual emphasis by the physician.

Bronchodilators. Although alveolar destruction is an irreversible process, components of airways obstruction are partly reversible. In some patients, it is easy to demonstrate clinical lessening of bronchospasm and improvement in flow rates after drug administration. If airway resistance is measured by body plethysmograph, more than 90% of patients will show significant improvement[3].

A variety of drugs is available. They include beta-sympathomimetic agents (e.g. metaproterenol, terbutaline, isoetharine, ephedrine, isoproterenol, and epinephrine), phosphodiesterase inhibitors (e.g. aminophylline, theophylline) and combinations of both. Steroids are direct bronchodilators and do not cause the cardiac side effects characteristic of the other medications. They are especially helpful in the setting of eosinophilia or of asthmatic bronchitis, but over time can cause adrenal suppression and Cushing's syndrome. Once a patient is clinically stable, alternate day dosages will minimize side effects of cortisone. An objective trial of steroids (e.g. prednisone 10 mg q.i.d. for 10 days) with pulmonary function studies before and after may demonstrate reversible disease when less potent bronchodilators have failed.

Doses must be individualized, but drugs are generally more effective on a regular rather than an intermittent schedule. There are oral and rectal preparations of many of the drugs. Aerosolized administration is also effective if inhaled properly (steroids so given are reputed to produce fewer systemic effects), but is often abused by the patient in acute distress. In the acutely ill patient, parenteral administration guarantees effective serum concentration of the drugs.

Antibiotics. It is not possible to sterilize the tracheobronchial tree. When given results of a sputum culture, the clinician must distinguish between frank infection (acute bronchitis or pneumonitis) and simple colonization of bacteria. Increasing sputum volume or change in color often heralds significant infection and antibiotics should be started. In the absence of systemic illness (fever, chills, sweats) or pleuritic pain suggestive of lower respiratory infection, empiric use of ampicillin, erythromycin, or tetracycline (250 - 500 mg q.i.d. for 7-10 days) is usually effective. The cooperative patient with relatively stable chronic bronchitis can be given a prescription for one of the above with instructions to begin the drug when sputum appearance changes. Not uncommonly, recently hospitalized patients will colonize their sputum with gram-negative bacilli; in the absence of clinical bronchitis or pneumonitis, they should not be routinely treated.

Supplemental oxygen. There are no published well-controlled studies using oxygen as the sole treatment. However, chronic low flow administration to hypoxemic patients (primarily the chronic bronchitic) will reverse elevation in pulmonary artery pressure caused by previously low Pa O_2. Such patients tend to survive longer than hypoxemic patients not so treated. Many

patients complain of dyspnea, the subjective sensation of breathlessness, and may derive psychological benefit from the feel of humidified oxygen on the nasal mucosa; there is no rationale, however, to its administration in the absence of resting or exercise-induced hypoxemia. Oxygen therapy, itself, is not without hazard. Autopsies on 12 patients maintained on continuous low flow oxygen for 7-61 months showed pulmonary capillary proliferation, hemosiderosis, interstitial fibrosis, epithelial hyperplasia, hemorrhage, and fibrinous edema, nonspecific findings consistent with oxygen toxicity.[4] Thus oxygen is not an innocuous drug and should be reserved for hypoxic patients, especially those with cor pulmonale.

Breathing exercises. Normally, the diaphragm accounts for 2/3 of muscular function of inspiration, with accessory respiratory muscles providing the remainder. The pathologically distended lung in the emphysematous patient depresses and limits motion of the diaphragm, necessitating more work by the accessory muscles and an increased cost of breathing. Sensation of air hunger causes the patient to begin to inhale before exhalation is completed, resulting in discoordinated breathing. To correct the problem, the patient is taught to immobilize the thoracic cage and to inhale with the abdomen moving outward; he then contracts abdominal muscles and exhales through pursed lips. The result is a low ratio (1:3 or 1:4) of inspiratory to expiratory time, less air trapping, decrease in respiratory rate, and decrease in work of breathing.

Intermittent positive pressure breathing (IPPB). While the value of assisted ventilation in acute respiratory failure is well documented, there are no objective data to support its efficacy in the stable outpatient. As a routine means of administering aerosolized medication, inexpensive nebulizers are equally effective. The immediate effect of IPPB is similar to transient voluntary hyperventilation; $PaCO_2$ reverts to the pretreatment level within the next 15-120 minutes. IPPB may be of benefit for the patient with neuromuscular etiology of chronic respiratory insufficiency. If used to lower $PaCO_2$ it must be in conjunction with bronchodilators, attention to tracheo-bronchial toilet, instruction in effective use of respiratory muscles, and correction of secondary metabolic alkalosis.

Ancillary measures. Weight reduction is essential in the obese patient. Congestive heart failure (with resultant diminution of flow rates and lung volumes) is amenable to digitalis and diuretics. Pleural effusions and pneumothorax will restrict lung volumes and must be treated. Recurrent small pulmonary emboli can occur in the sedentary patient who may benefit from anticoagulation. Overzealous sedation can depress the respiratory center, especially in the patient with hypercarbia, and is best avoided. Since anorexia is a common complaint, especially when dyspnea is accompanied by air-swallowing, proper nutrition also should be stressed.

Rehabilitation medicine. The concept is a multidisciplinary approach with the aid of a health team (including physician, nurse, social worker, and respiratory therapist). Initial goal is for the patient to regain ability to perform acitivites of daily life. Subsequent progressive exercise plans are essential, in order to improve exercise tolerance. Exact type of work is not as important as the routine of accomplishment; walking, stationary bicycle riding, stair climbing, or even dusting or vacuuming will suffice. Vocational counseling can direct formerly active workers into less strenuous productive employment opportunities. Psychological and family difficulties precipitated or aggravated by the long-term illness must also be evaluated.

The ultimate goal is to improve length and quality of life. Early data from the University of Colorado suggest success in the patient with severe chronic obstructive lung disease. In a comprehensive program that included patient education, bronchial hygiene, breathing retraining, physical reconditioning and, in select instances, supplemental oxygen, patients subjectively felt better, improved exercise tolerance (e.g. walking, stair climbing); and the frequency and duration of hospital stays were decreased.[5]

REFERENCES

1. American Thoracic Society (Statement by Committee on Diagnostic Standards for Non-Tuberculous Respiratory Diseases): Definitions and classifications of chronic bronchitis, asthma, and pulmonary emphysema. Amer. Rev. Respir. Dis. 85: 762-768, 1962.
2. Burrows B: Physiologic variants of chronic lung disease. Chest 58:415-416, 1970
3. Ayres SM, Griesbach SJ, Reimold F, et al: Bronchial component in chronic obstructive lung disease. Amer. J. Med. 57: 183-194, 1974.
4. Petty TL, Stanford RE, Neff TA: Continuous oxygen therapy in chronic airway obstruction. Observations on possible oxygen toxicity and survival. Ann. Int. Med. 75:361-367, 1971.
5. Petty TL: Does treatment for severe emphysema and chronic bronchitis really help? (A response). Chest 65: 124-127, 1974.

ADDITIONAL SUGGESTED READING

1. Hodgkin JE, Balchum OJ, Kass I, et al: Chronic obstructive airway diseases. Current concepts in diagnosis and comprehensive care. JAMA 232: 1243-1260, 1975.
2. Lefcoe NM, Patterson NAM: Adjunct therapy in chronic obstructive pulmonary disease. Amer. J. Med. 54: 343-350, 1973.
3. Renzetti AD, Jr., McClement JH, Litt BD: The Veterans Administration Cooperative Study of Pulmonary Function. III. Mortality in relation to respiratory function in chronic obstructive pulmonary disease. Amer. J. Med. 41: 115-129, 1966.
4. Thurlbeck WM, Henderson JA, Frazer RG, et al: Chronic obstructive lung disease. A comparison between clinical, roentgenologic, functional, and morphological criteria in chronic bronchitis, emphysema, asthma, and bronchiectasis. Medicine 49: 81-145, 1970.

Department of Health Services

MOBILE DENTAL PROGRAM



SUZANNE DANDOY, M.D.
ACTING DIRECTOR

Since March 1973 the Department's Bureau of Dental Health has operated a Mobile Dental Program for the communities of Eloy, Nogales and Flagstaff.

Utilizing an 8′ x 36′ mobile trailer, staffed by a dentist, a dental assistant and a dental health educator, the unit coordinates educative and preventive methods in an effort to reduce the state's most prevalent chronic diseases, tooth decay and periodontal disease, among children.

Dental disease affects more than 90 percent of the state's population. Fully 50 percent of the pediatric population have decayed teeth by age two years, while the average 14-year old has eleven decayed, missing or filled teeth. Through teaching and encouraging the practice of correct oral health procedures, the Bureau's Mobile Dental Program is seeking to reduce dental carries in third, fourth and fifth grade students.

Adjustment of the fluoride content of community water supplies has proven the most efficient, effective and economical method of reducing dental decay, but, unfortunately, community water fluoridation is not yet a reality in Arizona. However, a dramatic reduction in the incidence of dental disease can be brought about through using such preventive methods as proper diet and daily brushing and flossing. It is the teaching of these correct oral hygiene practices and procedures, along with the provision of free dental treatment services for financially eligible children, that is at the heart of the Mobile Dental Program.

Every week, eight groups of eight children each receive five 40-minute class sessions in one section of the trailer. During the first session, the children are examined and their oral hygiene status and dental health status are evaluated. During the next four sessions the children learn and practice proper brushing and flossing techniques, observe living bacteria from their own mouths (by use of a phase microscope), receive nutrition information, and learn of the dangers and causes of tooth decay and periodontal disease. Films and handouts accompany the instruction and supervised practice. This variety of activities and aids helps motivate the children toward positive oral health habits by giving them not only the "how" part of proper care but also the important "why" component.

Upon completion of their week-long class sessions, the children receive toothbrush kits to take home, plus an additional toothbrush and dental floss which will be kept in the classroom for supervised daily use. This activity serves as

additional reinforcement for the remainder of the school year.

Meanwhile, in the dental operatory at the other end of the trailer, the dentist provides examinations and basic treatment services, fillings, cleanings and extractions to those students referred by the school nurse. To date, 1425 individual children have received 16,257 treatment services.

Before the mobile unit leaves the school, the children are again examined and their oral hygiene status reevaluated. This reevaluation normally occurs after a 60 to 90 day period of daily classroom brushing.

The first year, 1,561 children participated in 7,805 educational sessions which included a summer session in Eloy. The second year, a summer educational program was not included, giving a lower participation total of 1,338 children during 6,690 sessions. At the completion of the second year's activities, a 42 percent improvement in dental health status and a 30 percent improvement in the oral hygiene status of total participating children had been achieved.

Clearly, it has been demonstrated that a properly reinforced education program will markedly improve the oral hygiene status of participating children. However, it would be premature to conclude that this improvement in oral hygiene status results in an accompanying adequate reduction in the incidence of dental decay. When one considers the time, effort and classroom disruption involved in order to gain a minimal reduction in dental decay, it seems only reasonable to consider other methods of prevention.

The program was developed as a pilot effort to test its effectiveness and acceptability. The effectiveness has been proven by both quantitative and qualitative evaluation, while its acceptability can be measured by the numerous requests for similar services from various areas of the state. If you would like to inquire about obtaining the Mobile Dental Program for your community, contact the Bureau of Dental Health at 271-5877.

Letters to Editor

Bruce Robinson, Managing Editor
"Arizona Medicine"
Dear Mr. Robinson

In the last few years, Computerized Tomography has developed from a technological breakthrough to a prime diagnostic element in neuro-radiological evaluation. Because of its cost, the "Certificate of Need" law applies. This has severely delayed installation in the larger hospitals where it is most useful and resulted in many installations in private offices which otherwise would not have been made.

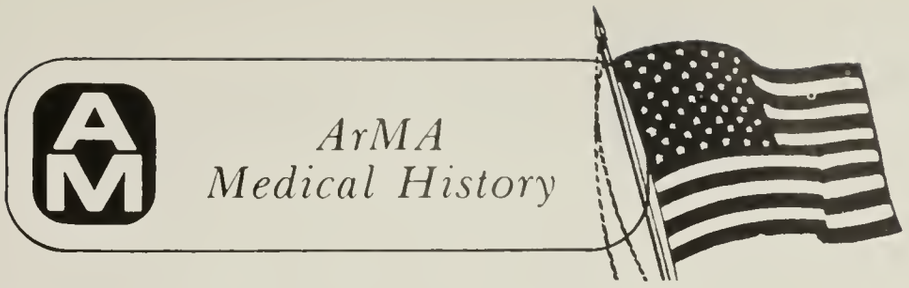
In Phoenix, one unit is in operation at Barrows Neurological Institute and five others are being installed.

Computerized Tomography is a radiologic procedure utilizing an x-ray beam to form an image and thus, very basically, should be included within the armamentarium of a Radiologist. It also is a very expensive procedure because of the very high capital investment required. This investment level is not really unique in radiology however. Therapy installations have always been on a par with this. A well-equipped Nuclear Medicine Laboratory requires a comparable dollar amount.

A very real danger, when high capital investment is made by anyone frequently requiring its use, is that of over-utilization. This is a primary danger of a Computerized Tomography Unit in the office of a neurologist or neurosurgeon. Another danger is that of competence. The radiologist doing these procedures frequently each day will become, necessarily, more competent than the physician doing them as a minor part of his professional activity.

As President of the Arizona Radiological Society, chapter of the American College of Radiology, I wish to make this statement of my views and those of the immediate past-president of the College, Dr. Robert Wise of Boston. I regret the decision of the neurologists. This has the possibilities of inflating costs and degrading quality of care. It will complicate the problems of Peer Review which are already very involved.

John W. Vosskuhler, M.D.
President
Arizona Radiological Society.



SIERRA VISTA COMUNITY HOSPITAL

KENNETH A. DREGSETH, M.D.



The hospital as it appeared with the 20-bed addition.

The Sierra Vista Community Hospital is located in Cochise County, Arizona, and is a member hospital of the American Hospital Association. The hospital was established in 1963, and is located at 300 El Camino Real. The hospital is accredited by the Joint Commission of Accreditation of Hospitals, is a Blue Cross participant and is certified for participation in the Medicare program. The hospital is an acute, short term care hospital, and has increased its bed capacity from 35 to 55 beds.

The history of the Sierra Vista Community Hospital has been rather a stormy one. It was opened in October of 1963, as an Osteopathic Hospital, and since that time there have been three governing bodies, as well as eight administrators, who have undertaken the task of bringing the hospital into financial solvency. At it's initial opening, the hospital was not certified for Blue Cross, had not been accredited, there were three doctors on the staff, patients were few, and payments were fewer; so, the hospital was closed by the Department of Internal Revenue in early 1964 for lack of funds to pay the employees and federal and state income taxes on wages. A group of interested citizens formed a Citizens Committee to govern the hospital and meet it's financial obligations, and the doors were again opened, and the hospital was then known as Cochise General Osteopathic Hospital. This venture did not prove to be successful, and it was again near closing when a Board of Directors composed of seven business men from the community took over the hospital operation, and it was again reopened under the name of Sierra Vista Community Hospital.

Since that time, progress has been slow but steady - beds have been added to the original 35 beds, and have added or replaced many new and needed items of equipment.

Our staff of doctors has grown from three to fourteen, with 30 consultants in all medical service areas. Mr. John Lally, our present Administrator, brings many years of experience in Administration to the hospital, and under his guidance, and the direction of the Board of Directors, who are all businessmen from the surrounding and Sierra Vista Area, have recently increased the bed capacity of the hospital to 55, with many plans on the drawing board to expand the ancillary services offered here, to better serve the Sierra Vista Community.

Radiology
Case of the Month

RADIOLOGY CASE NO. 10

TIM B. HUNTER, M.D.
INA L. TONKIN, M.D.



Figure 1a



Figure 1b



Figure 2a



Figure 2b

A 4205 gm Indian female was delivered vaginally after a 37 week gestation. Her mother was a class A diabetic and the pregnancy was complicated by pre-eclampsia. The infant's initial hours of life were stormy with hypoglycemia and cyanosis but by 15 hours of life she was as able to breathe on room air alone. An umbilical vein catheter had been inserted at one hour of life to treat her hypoglycemia, but it was withdrawn when it could not be properly positioned and was replaced by an umbilical artery catheter. At 25 hours of age the patient's abdomen became tense and distended and she regurgitated several feedings. Abdominal radiographs (Figures 1a and b) were obtained. The significant findings are marked with arrows. Because of these findings a specific diagnosis was entertained. The umbilical artery catheter was removed and intravenous antibiotics were begun in addition to the hyperalimentation the patient was receiving. The child progressed well with conservative therapy and did not show signs of intestinal performation or peritonitis. By day 11 oral feeding was attempted but not tolerated. The child vomited all feedings and clinically appeared to have an obstruction.

At this time two barium enemas 24 hours apart were performed. Representative examples from these studies are illustrated by Figures 2a and b. What do these demonstrate?

INTESTINAL STRICTURE FOLLOWING ISCHEMIC BOWEL INJURY

TIM B. HUNTER, M.D.
INA L. TONKIN, M.D.

DISCUSSION

The abdominal radiographs (Figures 1a and b) demonstrate intramural gas, portal venous gas, and bowel distention (arrows). Because of these findings, necrotizing enterocolitis was diagnosed.[1] The two barium enemas (Figures 2a and b) reveal strictures in the decending, transverse, and ascending colon regions (arrows). Bowel stricture can occur in both adults and infants secondary to either occlusive or non-occlusive ischemic bowel disease.[2] It is well recognized in adults and though it has been reported in infants, it has not been generally appreciated in this age group.[2] The patient had a fairly dramatic case of necrotizing enterocolitis which was well managed medically. The pathogenesis in necrotizing entercolitis is not understood but non-occlusive small vessel ischemia is presumed to play a significant role. Other causes of bowel inschemia and possible resulting stricture formation include complications from umbilical catheter use, sepsis, dehydration, midgut volvulus, and complications from trauma or surgery.[2] The role played in the present case by the use of umbilical catheters is uncertain, although there was no apparent clinical relationship between the catheter use and the patient's bowel problems.

The strictures resulting from ischemic bowel injury can develop in only a few weeks after recovery from the acute disease. As more cases of necrotizing enterocolitis are diagnosed and treated medically, this complication will probably become more frequent. The bowel has three basic ways it can react to occlusive or non-occlusive vascular insult. An injured portion of bowel can become totally necrotic with secondary perforation and peritonitis or it may be transiently injured and heal completely regaining its normal function. Thirdly, there are probably cases in which there is considerable bowel injury but not enough to cause perforation but enough for healing with fibrosis and stricture formation.[2] The present case illustrates the latter situation. The patient underwent a right sided colostomy on the 24th day of life and on day 90 the diseased colon was definitively resected with anastomosis between the cecum and the remaining normal distal portion of the colon. The patient tolerated oral feedings five days after surgery and was transferred to Sells Indian Hospital 11 days postoperatively. At the time of discharge from the Arizona Medical Center she appeared to be developing normally for an infant of her age.

From: Dept. of Radiology, Arizona Medical Center, U. of A., Tucson, 85724

REFERENCES

1. Pochaczevsky, R. and Kassner, G.E.: Necrotizing Enterocolitis of Infancy. Amer J Roentgenol 113: 283-296, 1971.
2. Cockrill, H.; Oliphant, M. and Grossman, M.: Intestinal Strictures in the Neonate. Amer J Roentgenol 123:764-769, 1975.

The A.M.S.A. Report

REPORT ON THE STUDENT BUSINESS SESSION AND AMA CLINICAL CONVENTION NOVEMBER 29 - DECEMBER 3, 1975

In this report I will limit myself to discussing the AMA Student Business Session and student related issues presented at the AMA convention. In the next AMSA newsletter I'll describe the AMA structure and actions taken at the Honolulu convention concerning major health issues. At the next AMSA meeting we'll talk about all the above topics in greater detail plus discuss how the student body can most effectively participate in organized medicine.

STUDENT BUSINESS SESSION

The SBS was established in 1973 along with active medical student membership in the AMA. It meets twice yearly, the day before each AMA convention. Each state medical society is *encouraged* to send a student to each SBS. In addition, medical schools can send students or individual students can send themselves.

There are five (5) officers of the SBS, a Chairperson, Vice-Chairperson, Secretary, Delegate to the AMA House of Delegates and an alternate Delegate. Resolutions can be written and presented by any student or their representative. These resolutions are discussed and either passed or defeated by the SBS. If passed they are presented to the AMA House of Delegates.

This sounds fine in theory but in reality what happened in Honolulu was that only 23 students were present, 6 from the University of Hawaii. Only 9 state societies sponsored a total of 12 students (California sent 4). This is similar to the attendance shown at Atlantic City this past summer. Of the 5 officers only 2 are elected by the SBS, 3 are approved by AMSA. Elections and appointments are not for specific offices. Instead the five officers get together and decide who is to fill each spot.

In addition, every student present could vote regardless of how many were present from each school. The SBS handbooks containing resolutions were not handed out until the morning of the meeting. About half of the students present were well informed on health issues, the other half weren't.

The faults of this arrangement should be obvious.

1) It is unrepresentative of a majority of medical schools.
2) Each SBS meeting can be controlled by the medical students in the area of the convention. (Think of the different SBS positions that could develop if two consecutive meetings were held in San Francisco and Dallas.)
3) A great deal of time is spent explaining health issues rather than discussing solutions.

I think this lengthy description was necessary in order to view the results of the SBS meeting in proper context.

SBS Resolutions

I will list each resolution presented (total of 7), a short rationale behind each, the SBS vote, my vote and AMA House of Delegates vote.

1. Encouraging AMA support of National Rural Health Week.
 Rationale — encourage Rural practice.
 SBS — passed
 My vote — yes
 AMA H of D — passed
2. Health manpower bill including
 a. discontinued capitation
 b. a limit on resulting increased tuition
 c. increased funds for NHSC scholarships and loans
 d. including inner city areas in the definition of underserved populations.
 e. a limit on residencies by number and specialty
 f. steps to eliminate dependence on foreign medical graduates
 g. money for remote site training
 h. support for minority recruitment and acceptance
 i. support of transfer programs for American medical students studying abroad.

 Rationale — It is impossible to discuss the reasoning behind all these points in a short report. If you're interested I suggest you read the article in the December issue of the *New Physician* and come to the next AMSA meeting where we'll discuss this further.

SBS — passed (close vote)

My vote — yes

AMA — defeated

3. Encouraging increased grant money for Geriatrics programs in medical schools.

Rationale — not enough taught on the subject

SBS — passed

My Vote — yes

AMA — referred

4. Alternatives to medical school for licensure.

Rationale — medical school is not the only way to learn medicine

SBS — defeated

My Vote — no (with encouragement to study the issue further)

5. Studying alternative ways to fund medical education

Rationale — introduced by the people who were irritated over the success of the health manpower bill.

SBS — passed

My Vote — did not vote (had to relieve myself)

AMA — passed

6. Opposition to sex discrimination at medical schools concerning pay and advancement.

SBS — passed

My vote — yes

AMA — passed

7. Condemning University of Mississippi for a particular case of sex discrimination.

SBS — defeated

My Vote — no (The school was not present to defend itself.)

Other SBS Activities

1. The SBS is currently investigating the student liability problem. The chairperson is conducting a survey of all medical schools to find out how many have problems, what they are and how they are being solved.

2. The SBS publishes a newsletter, *Pulse*, which is sent to each student AMA member.

AMA Convention — Student Issues

Two issues directly relating to students were brought up at the AMA convention. The first was a report describing advances made in recent years insolving the rural health care delivery problem. Anyone wanting to read this can get it from me.

As part of some recommendations to radically restructure the AMA house of delegates it was proposed that student representation be increased from one delegate to a number proportional to the total student AMA membership, a projected increase from one delegate to six. This was generally not well received but since it was part of a much larger resolution it was referred back to committee for further discussion. Correction — whole resolution was defeated.

Conclusions

In spite of my previous criticism of the SBS I think participation by students from the University of Arizona should be continued for several reasons.

1) It's good exposure to organized medicine for students.
2) It increases communication with Arizona Medical Association delegates.
3) A number of good resolutions have been passed since 1973 including many on students' rights.
4) The organizational defects can only be corrected by continued participation, not by dropping out.
5) It doesn't cost the school any money; the State Medical Association pays for it.

Finally, I would like to compliment the Arizona Medical Association for being progressive enough to sponsor a student to SBS meetings. I would also like to compliment the Arizona delegation to the convention for its willingness to answer my questions and discuss the issues, an attitude I found not shared by many other states.

Doug Outcalt
Class of 1977

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

THE ARIZONA MEDICAL ASSOCIATION, INC.

ARTICLES OF INCORPORATION AND BYLAWS

The meeting of the Articles of Incorporation and Bylaws Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, AZ on February 20, 1976, convened at 5:40 p.m., Charles E. Henderson, M.D., Chairman, presiding.

COLLECTION PROCEDURE FOR SPECIAL ASSESSMENTS

IT WAS MOVED AND CARRIED TO RECOMMEND THE FOLLOWING RESOLUTION TO THE BOARD OF DIRECTORS.

RESOLVED. That Chapter IX - Dues and Assessments - Section 2. Fixing of Special Assessments; Payment; Collection, Enforcement; - (b) be amended to read:

(b) Special assessments shall be payable thirty days after notice of such has been mailed, and shall be delinquent sixty days after said date. [*The secretary of each county society shall collect and and forward the special assessments to the Association Secretary.*]

and be it further

RESOLVED: That Chapter IX — Dues and Assessments — Section 5. Exemptions be amended to read:

Section 5. Exemptions — Members exempt from the payment of dues and special assessments shall include (a) 50 Year Club, (b) Associate Members, (c) Affiliate Members, and (d) Honorary Members. Members 70 years of age or older, and other members by reason of physical disability, illness, or financial hardship may also be exempted. A member must request such exemption, and be approved therefor *(by the county medical society and)* by the Board. Exemption from payment of dues to the American Medical Association shall be in accordance with the rules of that association.

Note: All bracketed, italicized words represent deletions; all fully capitalized words are new material.

INSTALLMENT PAYMENT OF DUES

IT WAS MOVED AND CARRIED TO RECOMMEND THE FOLLOWING RESOLUTION TO THE BOARD OF DIRECTORS:

Resolved, That Chapter IX — Dues and Assessments, Section 1. Fixing of Annual Dues; Payments; Reinstatements; Collections; Enforcement; be amended by adding:

(d) THE BOARD MAY, UPON THE RECOMMENDATION OF A COUNTY SOCIETY, AUTHORIZE INSTALLMENT PAYMENT OF DUES BY A MEMBER. THE FIRST SHALL BE DELINQUENT AFTER FEBRUARY 15 OF THE YEAR FOR WHICH SUCH DUES ARE LEVIED. THE DELINQUENT DATES FOR SUBSEQUENT PAYMENTS SHALL BE DETERMINED BY THE BOARD, BUT IN ANY EVENT THE FINAL PAYMENT WOULD BE DELINQUENT AFTER OCTOBER 1. ANY MEMBER WHOSE PAYMENT HAS NOT BEEN REMITTED TO THE ASSOCIATION SECRETARY ON OR BEFORE THE DELINQUENT DATE SHALL STAND SUSPENDED UNTIL SUCH DELINQUENCY IS CORRECTED. ANY INSTALLMENT PROGRAM FOR PAYING DUES AND ASSESSMENTS FOR THE AMERICAN MEDICAL ASSOCIATION SHALL BE DETERMINED BY THE AMERICAN MEDICAL ASSOCIATION.

Note: All bracketed, italicized words represent deletions; all fully capitalized words are new material.

Meeting adjourned 6:08 P.M.

William E. Crisp, M.D.
Secretary

EXECUTIVE COMMITTEE

The Executive Committee meeting of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, AZ on Friday, February 20, 1976, a quorum being present, convened at 6:51 p.m., William C. Scott, M.D., President and Chairman presiding.

MINUTES

The minutes of the meeting held January 8, 1976 were approved as distributed.

GRIEVANCE COMMITTEE

The question of a member of the Grievance Committee who is also a practicing attorney was discussed at length with the member present — RECEIVED FOR INFORMATION

DEPARTMENT OF HEALTH SERVICES

Dr. Dandov reviewed the various activities of the department including:

Vehicle Inspection Statute
Medicaid Status
New Assistant Directors
Lead Level Study
Advisory Committee on School Health

MALPRACTICE ASSESSMENT

Exemption Request

IT WAS MOVED AND CARRIED TO GRANT AN EXEMPTION TO LOUIS E. YOUNG, M.D. DUE TO FINANCIAL HARDSHIP

Members who have not paid as of 2 15 76

IT WAS MOVED AND CARRIED THAT THOSE WHO HAVE NOT PAID, AS LISTED BELOW, ARE TO BE ADVISED THAT THEY WILL BE SUSPENDED UNLESS THEY ADVISE THE COMMITTEE OF A VALID REASON WHY THEY SHOULD NOT BE SUSPENDED.

Maricopa County

Paul G. Bauer, M.D.
Wilbur C. Bayham, M.D.
(partial payment of $50)
L. D. Beck, M.D.
R. V. Bhandhusavee, M.D.
Donald C. Boatwright, M.D.
Rodolfo M. Campos, M.D.
Paul S. Causey, M.D.
Merrill S. Chernov, M.D.
Robert B. Cloar, M.D.
Ward D. Coffman, M.D.
Milton M. Connell, M.D.
Earl S. Cronk, M.D.
Michael M. Daftarian, M.D.
Richard L. De Cato, M.D.
A. Howard Erickson, M.D.
Benigno Faustino-Tataje, M.D.
Stephen E. Flynn, M.D.
George W. Gannon, M.D.
J. Allen Ginn, Jr., M.D.
Stuart M. Gould, M.D.
Eldon B. Hamblin, M.D.
William H. Harper, M.D.
John R. Hayes, M.D.
Warren H. Heller, M.D.
Charles W. Howard, M.D.
Noah M. Koenigsberg, M.D.
Frederick L. Lang, M.D.
Walter B. Lee, M.D.
Jack L. Loudermilk, M.D.
Johan A. Martin III, M.D.—
—(partial payment of $10)
Thomas E. McCauley, M.D.
William E. McGee, Jr., M.D.
Wm. W. McKinley, Jr., M.D.
Richard A. Melde, M.D.
Wm O. Minturn, M.D.
Adel Montasir, M.D.
Hollis E. Phillips, M.D.
Eldon L. Robins, M.D.
Sterling J. Ryerson, M.D.
James M. Severance, M.D.
Raymon G. Shoen, M.D.
Frank B. Simchak, M.D.
Kenneth E. Starz, M.D.
Dominic A. Trapanotto, M.D.
Ronald N. Yeomans, M.D.
Tadeusz Zakrzewski, M.D.
Adib Zaky, M.D.

Pima County
Hugh D. Allen, M.D.
Leonard C. Baldauf, M.D.
Raymond F. Bock, M.D.
Larry J. Buckels, M.D.
Ian M. Chesser M.D.
Michael W. Cohen, M.D.
Terence R. Collins, M.D.
James J. Corrigan, Jr., M.D.
Bernard B. Dwyer, M.D.
Benjamin T. Edwards, M.D.
Morris H. Fine, M.D.
George N. Forker, M.D.
Vincent A. Fulginiti, M.D.
Raymond F. Graap, M.D.
Helen V. Gruhl, M.D.
Stuart R. Hameroff, M.D.
Ronald C. Hansen, M.D.
Thomas R. Harris, M.D.
Charles E. Harter, M.D.
Helen Johnson, M.D.
Frank V. Keary, M.D.
Howard R. Lawrence, M.D.
Elmer S. Lightner, M.D.
John W. Madden, M.D.
Stephen W. Moore, M.D.
Thomas E. Newman, M.D.
Andrew W. Nichols, M.D.
Horacio A. Ore-Giron, M.D.
William C. Petty, M.D.
Lloyd C. Planting, M.D.
Jerome Ritter, M.D.
Walter C. Rogers, M.D.
Lee I. Schocket, M.D.
C. Jack Snider, M.D.
Anita M. Stafford, M.D.
Paula L. Stillman, M.D.
Richard W. Switzer, M.D.
Jesse W. Tapp, Jr., M.D.
Lynn M. Taussig, M.D.
Richard J. Toll, M.D.
Edgar R. Updegraff, M.D.
Willard R. Van Nostrand, M.D.
Anacleto C. Veloso, M.D.
Marvin Weisbard, M.D.
John K. Wenham, M.D.
Marlys H. Witte, M.D.
Carey C. Womble, M.D.

Cochise County
Kenneth A. Dregseth, M.D.
Charles W. McMoran, M.D.

Gila County
Watson M. Lacy, Jr., M.D.

Mohave County
George Clarke, M.D.
Gordon L. Ritter, D.O.
Kenneth F. Conry, M.D.

Pinal County
James H. Boyd, M.D.
Roland Deputy, M.D.
T. J. Hicks, M.D.
Robert L. Hyde, M.D.
Milton Robinson, M.D.

Yuma County
Robert G. Delph, M.D.
Wilbur Dice, M.D.
Maurice S. Goldman, Jr., M.D.
Jeanne B. Johnson, M.D.
William A. Phillips, M.D.

Yavapai County
Robert D. Hodgell, M.D.
Roland Hussong, M.D.

CORRESPONDENCE

Maricopa County Pediatric Society letter 2/13/76

The subject letter regarding providing hospital bills to physicians was referred to the Board of Directors.

OTHER BUSINESS

Executive Session

THE COMMITTEE WENT INTO EXECUTIVE SESSION AT THIS POINT TO DISCUSS PERSONNEL MATTERS. AT THE CONCLUSION OF THE EXECUTIVE SESSION THE FOLLOWING ACTIONS WERE TAKEN.

IT WAS MOVED AND CARRIED TO PROVIDE MR. BARNETT WITH A LEASED AUTOMOBILE ON THE SAME BASIS AS AN AUTOMOBILE IS PRESENTLY BEING PROVIDED TO THE EXECUTIVE DIRECTOR.

IT WAS MOVED AND CARRIED TO EXTEND A COST OF LIVING SALARY ADJUSTMENT (7%) TO THE EXECUTIVE DIRECTOR AS HAS BEEN PROVIDED TO THE TWO ASSOCIATE EXECUTIVE DIRECTORS.

Meeting adjourned 8:00 p.m.

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, AZ on Saturday, February 21, 1976, a quorum being present, convened at 10:12 A.M., William C. Scott, M.D., President and Chairman, presiding.

WELCOME

Dr. Scott welcomed the several county society presidents and other guests.

MINUTES

The minutes of the Board of Directors meetings held January 10, 1976 were approved as distributed.

ArMPAC

Dr. Langston reported, that while the 2/14/76 political education seminar was rather poorly attended, the speakers from California and Chicago did an excellent job. He announced that the annual ArMPAC banquet is scheduled for Thursday, April 29, 1976 at 8 P.M. and Dr. John Zapp, chief lobbyist from AMA will be the great speaker.

IT WAS MOVED AND CARRIED TO HAVE A LETTER SENT BY THE BOARD OF DIRECTORS TO THE MEMBERSHIP URGING EACH MEMBER TO JOIN AND SUPPORT THE ArMPAC PROGRAM.

MALPRACTICE INSURANCE CRISIS COMMITTEE

H.B. 2001

Dr. Brooks reviewed the current status of the bill indicating that it would probably be signed by the Governor on 2/27/76.

Mutual Insurance Company of Arizona

A review of the organizational status of MICA was made. It was tentatively determined to hold a special board meeting on March 7th for the purpose of reviewing the final draft of H.B. 2001 and determining whether we will proceed as planned.

IT WAS MOVED AND CARRIED THAT WE SUPPORT THE CONCEPT OF A DIFFERENTIAL BEING CHARGED FOR NON MEMBERS TO OFFSET THE ADDITIONAL UNDERWRITING EXPENSE.

IT WAS MOVED AND CARRIED TO EXPRESS THE APPRECIATION OF THE ASSOCIATION TO MERRILL S. CHERNOV, M.D. AND HIS GROUP FOR THEIR SUPPORT OF ArMA'S EFFORTS.

BOARD OF DIRECTORS

Nominations for AMA Councils

IT WAS MOVED AND CARRIED TO NOMINATE ROBERT E. T. STARK, M.D. AS A CANDIDATE FOR A POSITION ON THE COUNCIL ON MEDICAL EDUCATION WITH THE UNDERSTANDING THAT FULL FINANCIAL SUPPORT FOR HIS CAMPAIGN IS INCLUDED. THE BOARD ALSO EMPOWERED THE EXECUTIVE COMMITTEE TO FORWARD ADDITIONAL NOMINATIONS.

BOMEX appointments

IT WAS MOVED AND CARRIED TO RECOMMEND RUBEN ACOSTA, M.D. AND JAMES E. BRADY, JR., M.D. FOR APPOINTMENT TO THE BOARD OF MEDICAL EXAMINERS.

It was also agreed that when the named are received from Maricopa County Medical Society that they would be forwarded as submitted.

National Leadership Conference

Drs. Kahle, Sattenspiel and Engelberg reported on the subject conference held January 23-25.

Social Security Numbers

The letter from the Medical Society of the State of New York regarding the subject matter was reviewed.

IT WAS MOVED AND CARRIED TO ADOPT THE FOLLOWING RESOLUTION AND FORWARD TO THE ArMA HOUSE OF DELEGATES AT THEIR NEXT MEETING.

WHEREAS, In 1934 the Social Security Act was created as a social insurance vehicle; and

WHEREAS, A numbering identifier was assigned to every covered insured; and

WHEREAS, There are federal regulations specifying that the Social Security number may only be required for Social Security Administration and Internal Revenue Service purposes with all other uses being voluntary; and

WHEREAS, We are now being informed by the Department of Health, Education and Welfare that they are mandating the use of such Social Security number as an identifier on all hospital records in order to enable the Bureau of Quality Assurance to tie medical records to an individual physician; and

WHEREAS, The Medical Society of the State of New York has prepared an alternate identifying system which is the *Double Blind Code*, therefore be it

RESOLVED, That the Arizona Medical Association is herewith expressing its total opposition to the use of the Social Security number as a universal numbering identifier.

EXECUTIVE COMMITTEE

Membership Status Changes Approved

Maricopa County Medical Society

1. Edward L. Compere, M.D. Active to Active Over 70 - Account Age - Effective 1 1 76 - Dues Exempt
2. Paul H. Koren, M.D. - Active to Associate - Account Retirement - Effective 1 1 76 - Dues Exempt

Pima County Medical Society

1. Otto A. Backus, M.D. - Active over 70 to Associate - Account Retirement - Effective 1 1 76 - Dues Exempt
2. Henry P. Limbacher, M.D. - Active to Associate - Account Retirement - Effective 1 1 76 - Dues Exempt
3. L. Craig Mac Beth, M.D. - Active to Associate - Account Retirement - Effective 1 1 76 - Dues Exempt
4. Robert E. O'Mara, M.D. - Active to Affiliate - Account Out of State - Effective 1 1 76 - Dues Exempt
5. Robert T. Pfundt, M.D., Active to Associate, Account Retirement - Effective 1/1/76 - Dues Exempt
6. Kenneth S. Wayne, M.D., Associate to Affiliate - Account Out of State - Effective 1/1/76 - Dues Exempt

Gila County Medical Society

1. Richard B. Johns, M.D. - Active to Service - Account Federal Employment - Effective 1 1 76 - Dues Exempt

Dues Exemptions Granted

Maricopa County Medical Society

1. Warren A. Colten, M.D. - Exemption from 1976 dues - Account Financial Hardship
2. Louis C. Kossuth, M.D. - Exemption from 1976 dues - Account Financial Hardship.

ARTICLES OF INCORPORATION & BYLAWS COMMITTEE

Collection Procedure for Special Assessments

IT WAS MOVED AND CARRIED TO SUBMIT THE FOLLOWING RESOLUTION TO THE HOUSE OF DELEGATES:

RESOLVED, That Chapter IX - Dues and Assessments - Section 2. Fixing of Special Assessments; Payment; Collection; Enforcement; - (b) be amended to read:

(b) Special assessments shall be payable thirty days after notice of such has been mailed, and shall be delinquent sixty days after said date. [*The secretary of each county society shall collect and forward the special assessments to the Association Secretary.*]

and be it further

RESOLVED, That Chapter IX - Dues and Assessments - Section 5. Exemptions be amended to read:

Section 5. Exemptions - Members exempt from the payment of dues and special assessments shall include (a) 50 Year Club, (h) Associate Members (c) Affiliate Members, and (d) Honorary Members. Members 70 years of age or older, and other members by reason of physical disability, illness, or financial hardship may also be exempted. A member must request such exemption, and be approved therefor [*by the county medical society and*] by the Board. Exemption from payment of dues to the American Medical Association shall be in accordance with the rules of that association.

Note: All bracketed, italicized words represent deletions; all fully capitalized words are new material.

Installment Payment of Dues

IT WAS MOVED AND CARRIED TO SUBMIT THE FOLLOWING RESOLUTION TO THE HOUSE OF DELEGATES:

RESOLVED, That Chapter IX - Dues and Assessments, Section 1. Fixing of Annual Dues; Payments; Reinstatements; Collections; Enforcement; be amended by adding:

(d) THE BOARD MAY, UPON THE RECOMMENDATION OF A COUNTY SOCIETY, AUTHORIZE INSTALLMENT PAYMENT OF DUES BY A MEMBER. THE FIRST PAYMENT SHALL BE DELINQUENT AFTER FEBRUARY 15 OF THE YEAR FOR WHICH SUCH DUES ARE LEVIED. THE DELINQUENT DATES FOR SUBSEQUENT PAYMENTS SHALL BE DETERMINED BY THE BOARD, BUT IN ANY EVENT THE FINAL PAYMENT WOULD BE DELINQUENT AFTER OCTOBER 1. ANY MEMBER WHOSE PAYMENT HAS NOT BEEN REMITTED TO THE ASSOCIATION SECRETARY ON OR BEFORE THE DELINQUENT DATE SHALL STAND SUSPENDED UNTIL SUCH DELINQUENCY IS CORRECTED. ANY INSTALLMENT PROGRAM FOR PAYING DUES AND ASSESSMENTS FOR THE AMERICAN MEDICAL ASSOCIATION SHALL BE DETERMINED BY THE AMERICAN MEDICAL ASSOCIATION.

Note: All bracketed, italicized words represent deletions; all fully capitalized words are new material.

It was determined not to instruct the delegates to AMA to submit a similar resolution to the AMA House of Delegates.

GOVERNMENTAL SERVICES COMMITTEE

Section on Medicaid

Dr. Farnsworth reviewed the report of the Section on Medicaid. Mr. Gary Hulshoff responded to many questions and discussed the current status of the Medicaid program.

IT WAS MOVED AND CARRIED TO TABLE THE MATTER.

LEGISLATIVE COMMITTEE

Dr. Sattenspiel reported on the current status of the legislative session. RECEIVED.

MEDICAL EDUCATION COMMITTEE

Confirmation

IT WAS MOVED AND CARRIED TO CONFIRM ALBERT RIZZOLI, M.D. AS A MEMBER OF THE MEDICAL EDUCATION COMMITTEE.

AMA DELEGATION

Mr. Outcalt's report on the AMA Clinical Meeting was received. Dr. Shapiro and others discussed plans for the 1976 Annual Meeting in Dallas.

CORRESPONDENCE

AMSA Annual Report

Miss Kathryn L. Reed's letter as follows was received:

"The American Medical Student Association of the University of Arizona College of Medicine has served in two basic capacities during the past year: first, as a conduit for information harvested from the nation at large and delivered to the student body for its disposal; and second, as a forum for discussion of problems of interest to the students.

The Arizona Medical Association funded two students' attendance of the American Medical Association Annual and Clinical conventions during 1975. The exposure to organized medicine was extremely valuable to those students in terms of educating them beyond the confines of the academic institution. It is easy to understand that medical students on a three year program would have their time well-consumed by medical studies. The attempt to look beyond this work to other problems of medical practice is a difficult one for students; the support of the state association has been a factor in realizing these attempts and is greatly appreciated by the student organization."

ArMA Auxiliary

Mrs. George L. Hoffmann's letter of 1 27 76 expressing appreciation for the annual budget contribution of $1,200.00 was received.

"Physician of the Day" letters

Letters of appreciation for the "Physician of a Day" were received from the following:

Senator Osborn
Senator Turley
Senator Van Arsdell
Representative Hays
Representative Lindeman
Representative Peaches

OTHER BUSINESS

Auxiliary Name

IT WAS MOVED AND CARRIED TO PERMIT THE WOMAN'S AUXILIARY TO THE ARIZONA MEDICAL ASSOCIATION TO CHANGE ITS NAME TO THE ARIZONA MEDICAL ASSOCIATION AUXILIARY, INC. AND TO GRANT PERMISSION TO USE THAT NAME.

Maricopa County Pediatric Society

The letter of 2 13 76 from the subject organization regarding the providing of hospital bills to the patients physicians was received for information.

Health Systems Agency Designations

It was pointed out that the Governor has recommended the following Health Systems Agencies:

Health Service Area 1

The Central Arizona Health Systems Agency application submitted by the Maricopa County Comprehensive Health Planning Council and Gila-Pinal Health Planning Committee.

Health Service Area 2

The Health Systems Agency of Southeastern Arizona application submitted by the Pima Association of Governments and the Southeastern Arizona Governments Organization.

Health Service Area 3

The Greater Arizona Health Systems Agency application has been withdrawn by the Northern Arizona Council of Governments. In this regard, I have suggested that the applicant seek whatever additional technical assistance necessary from your office in order that they may re-submit a more viable application prior to the second review cycle deadline of April 16, 1976.

Health Service Area 4

The Navajo Health Systems Agency application submitted by the Navajo Comprehensive Health Planning Agency.

Concern was expressed that a government agency had been recommended for Area 2 instead of the community supported Health Planning Council.

IT WAS MOVED AND CARRIED TO SEND A LETTER TO HEW REAFFIRMING SUPPORT OF THE HEALTH PLANNING COUNCIL'S APPLICATION TO BE THE HEALTH SYSTEMS AGENCY FOR AREA 2 INSTEAD OF THE GOVERNMENT AGENCY'S APPLICATION.

Meeting adjourned 1:07 P.M.

William E. Crisp, M.D.
Secretary

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, AZ on Sunday, March 7, 1976, a quorum being present, convened at 2:04 p.m., William C. Scott, M.D., President and Chairman, presiding.

MINUTES

The minutes of the meeting held February 7, 1976 were approved as distributed

H. B. 2001

Dr. Brooks and Mr. Shyrl Nielsen reviewed H. B. 2001 as signed by the governor on 2 27 76 summarized as follows:

SUMMARY OF MAJOR PROVISIONS OF H. B. 2001 AS ENACTED INTO LAW

On February 26, 1976, the Arizona State Legislature, by a vote of 49-7 in the House of Representatives, and by a vote of 26-4 in the Senate, passed H. B. 2001. The bill was signed Friday, February 27, 1976 by Governor Raul Castro and is now effective. The major provisions of the new law are as follows:

INSURANCE PROVISIONS

Creation of a Joint Underwriting Plan (JUP)

H. B. 2001 establishes a joint underwriting plan within the Department of Insurance. All casualty insurers in Arizona are required to participate in the plan as a condition of transacting insurance business in Arizona. The JUP will offer occurrence-basis excess coverage professional liability insurance for a three-year period in limits up to $1,000,000, $2,000,000 or $3,000,000 aggregate per year for physicians and in limits of up to $5,000,000, $10,000,000 or $15,000,000 aggregate per year for hospitals. The premium rate for this excess coverage will be 11%, 13% or 15% of the cost of a physician's or hospital's occurrence-basis primary coverage policy or if primary coverage is on a claims-made basis, 11%, 13% or 15% of what the physician or hospital would have paid for an occurrence-basis primary policy, depending on the level of coverage selected. Unlike some previous versions of H. B. 2001, there are no provisions in the law for future assessments against physicians or hospitals in excess of the initial premium charged. Deficits, if and when they occur, will be satisfied by assessments on participating insurers, and those insurers will then be allowed to deduct such assessments from premium taxes due to the state. Such tax deductions are limited to 50% of the amount of premium tax due in any one year; excess amounts may be deducted in subsequent years.

In order to obtain excess coverage from the JUP, a physician or hospital must have primary coverage from a private insurer authorized to write professional liability insurance, from the JUP, or he must be self-insured by depositing cash or securities in the amount of $100,000 in an escrow account.

If the Director of Insurance finds that primary coverage is not readily available in the private market, the JUP can then be authorized to offer occurrence-basis coverage to physicians and hospitals at twice the actuarially sound rate for occurrence-basis coverage.

Health Care Insurers

H. B. 2001 authorizes establishment of domestic stock, mutual or reciprocal health insurers to provide professional liability insurance coverage. Insurers formed under the provisions of H. B. 2001 are exempted from certain capital and surplus requirements of the State Insurance Code for a three-year period. Under this exemption, a health care insurer will be permitted to offer a primary coverage policy with limits of $100,000 per occurrence and $300,000 aggregate per year by maintaining first year capital and surplus reserves of $1,000,000 rather than $3,000,000. Health care insurers are also granted an election as to whether or not they will participate in the JUP or in a state insurer insolvency guarantee plan should such a guarantee plan be established in the future. However, such insurers must offer coverage to all types of Arizona licensed health care providers.

There are provisions in H. B. 2001 which would require any other

There are provisions in H. B. 2001 which would require any other
insurer which was not established under the provisions of this law and which proposes to offer or is offering professional liability insurance to physicians or other individual health care providers after February 27, 1976 to offer such insurance to all underwriting categories of physicians, thus preventing so called "cream-skimming" of low risk practitioners.

The bill also provides for immunity from civil liability for all persons serving on insurance review committees and for all persons who furnish information to such committees or otherwise assist the committee, so long as those persons act in good faith and without malice.

TORT REFORM

Restrictions on the Definition of Medical Malpractice

H. B. 2001 provides that no medical malpractice action shall be based upon "assault and batter."

Requirement that Contracts be in Writing

H. B. 2001 requires that, in a case where a medical malpractice action is based upon an injury arising as a result of a breach of contract, the contract must be in writing.

Standard of Care-Locality Rule

H. B. 2001 provides that the standard of care applicable in medical malpractice actions is that of a reasonable, prudent health care provider within the State of Arizona acting in similar circumstances.

Statute of Limitations

H. B. 2001 provides that a medical malpractice action must be brought within three years of the date of injury. For minors, the period does not commence running until age seven. Exceptions are provided for cases where the defendant intentionally prevents discovery of an injury by concealing or misrepresenting facts about the injury and for actions based upon the leaving of a foreign object inside a patient.

Collateral Source Rule

H. B. 2001 provides that evidence can be submitted to the jury to show all economic benefits received or receivable by the plaintiff as a result of the injury, i.e., unemployment insurance, social security, hospital and medical bill, and income disability payments. Amounts that the plaintiff has paid to secure such benefits are also admissable.

Ad Damnum Clause

H. B. 2001 prohibits any reference to a dollar amount of damages in the complaint initially filed with the Court.

Medical Review Panels

H. B. 2001 establishes a mandatory medical liability review panel to which all medical malpractice actions are referred after such actions have been filed with the superior court. The panel is composed of three members: one physician, one lawyer, and one superior court judge. If a defendant is sued who is not a physician or if there are co-defendants in addition to the physician or physicians sued, the law provides that expert, non-voting consultants will be called by the panel to advise them on the various areas of health care involved in the suit.

The panel will determine whether the evidence presented to the panel will support a judgment for one party or the other. If either party rejects the decision of the panel, the plaintiff may proceed with the court action, but the decision of the panel is admissable as evidence.

If the panel finds for the defendant and the plaintiff proceeds with the litigation, the plaintiff must post a $2,000 cost bond to pay the defendant's court costs, attorney's fees and witness fees if the plaintiff subsequently loses. If the panel finds for the plaintiff and the defendant refuses to settle or the plaintiff rejects a settlement offer, the defendant must post a $2,000 cost bond payable to the plaintiff if plaintiff subsequently wins a judgment in excess of any settlement offer made by the defendant.

The panel procedure can be waived only if all parties to the action agree to the waiver.

Attorney Fee Regulation

H. B. 2001 provides for court review of the reasonableness of each party's attorney's fees upon the request of any party in the action. The court review applies whether the case is settled before trial or is carried through to a court judgment.

For a two-year period, information as to each party's fee arrangement in a medical malpractice action must be filed with the court, regardless of whether a review is requested. Such information is then transmitted to the Arizona Supreme Court, and the Supreme Court is instructed to study such data and make public recommendations for attorney fee reform by January 1, 1978.

Prevention of Discrediting Expert Witnesses Because of Financial Interest in Health Care Insurers

H. B. 2001 provides that evidence that a physician has insurance coverage from a health care insurer or has any other financial interest in such an insurer is inadmissable in any judicial proceeding, thereby preventing use of such evidence to impeach the credibility of expert witnesses because of possible bias arising from the fact that most physicians in the state are insured by a common physician-owned insurance company and that therefore each doctor so insured and testifying as a witness has a financial interest in the outcome of any medical malpractice litigation.

BOARD OF MEDICAL EXAMINERS PROVISIONS

H. B. 2001 increases the size of BOMEX to include nine physicians, two laymen, and the President of the State Board of Nursing.

BOMEX is given responsibility for administering, on a three-year cycle, a continuing medical education program which is certified by a medical association or a university and which is designed to educate the physician in current developments, skills, procedures and treatments in his field of practice.

The Act clarifies and strengthens the investigative powers of BOMEX.

The Act requires health care insitutions, as well as physicians and medical societies, to report instances of medical incompetence or unprofessional conduct to the Board; however, immunity from civil liability is provided to all persons who in good faith report to the Board, and the names of such persons are not subject to disclosure unless such information is essential to Board disciplinary proceedings.

H. B. 2001 also requires insurance companies to report information to BOMEX regarding the status of malpractice claims filed with those companies.

PEER REVIEW IN HOSPITALS

H. B. 2001 clarifies the status of peer review committees in hospitals and provides that the reports and minutes of such committees shall remain confidential and shall generally not be subject to disclosure in civil court proceedings.

The existing immunity provisions protecting persons serving on peer review committees or furnishing information to such committees are extended to cover the medical staff and administrative staff when engaged in peer review activities even though they may not be acting as a formal peer review committee.

BOARD OF DIRECTORS ACTIONS 2/7/76

It was pointed out that since the 2 7 76 meeting of the Board of Directors arrangements have been made to borrow the capital of one million dollars at the rate of 7% with the agreement that the certificates of deposit would earn 5% for a net differential of 2%. It was also noted that the various actions on 2 7 76 are deemed to authorize the various formal resolutions needed by the banks and others to carry out the implementation of the actions taken on 2 7 76.

IT WAS MOVED AND CARRIED TO REAFFIRM THE ACTIONS RELATING TO THE MUTUAL INSURANCE COMPANY OF ARIZONA TAKEN FOR THE BOARD OF DIRECTORS AT THEIR MEETING OF FEBRUARY 7, 1976.

1975 AUDIT

Dr Dexter reviewed the certified audit for the year 1975 as submitted by Henry & Horne, Certified Public Accountants. - RECEIVED.

1977 BUDGET

Dr. Dexter presented the 1977 budget as approved by the Finance Committee as follows:

	INCOME	EXPENDITURES	CONTINGENCY
General Operations	$605,722.00	$440,025.00	$165,697.00
Committee Operations	35,000.00	79,300.00	(44,300.00)
Annual Meeting	54,000.00	54,000.00	-0-
Publishing Operations	71,760.00	72,935.00	(1,175.00)
Building Operations	50,950.00	17,600.00	3,350.00
Benevolent & Loan Oprs.	4,500.00	4,000.00	500.00
TOTAL	$821,932.00	$697,860.00	$124,072.00

He pointed out that this budget calls for a dues of $250.00 of which $20.00 goes to the Journal operation. APPROVED FOR SUBMITTAL TO THE HOUSE OF DELEGATES.

Meeting adjourned 4:25 P.M

William E. Crisp, M.D.
Secretary
by
Bruce E. Robinson
Executive Director

(Continued on Page 411)

MANAGEMENT ADVICE



PHILIP KWART

MEMBER SMD SOCIETY OF MEDICAL DENTAL MANAGEMENT CONSULTANTS

Practice management counseling and personal financial planning

•

Objective review of proposed investments. (We do not *sell* investments, real estate or insurance).

•

Evaluation and improvement of collection methods.

•

Cost effectiveness surveys of your practice.

•

Facility design and feasibility studies.

MEDICAL BUSINESS CONSULTANTS

3225 North Central Avenue, Suite 300-B
Phoenix, Arizona 85012 Phone (602) 264-3803

WE BIND YOUR PERIODICALS

Preserve your reference journals as beautifully Bound Books. Choose from 30 different colors of durable Library Buckram or Imitation Leather.

$8.50 per volume, including name imprint

Inquire about quantity discounts.

Free local pick up and delivery on 10 volumes or more.

ROSWELL BOOKBINDING

2614 North 29th Avenue
PHOENIX, ARIZONA 85009
272-9338

Before prescribing, please consult complete product information, a summary of which follows:

Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli, Klebsiella-Aerobacter, Staphylococcus aureus, Proteus mirabilis,* and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note: Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with G.I. disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute, painful phase of urinary tract infections. *Usual adult dosage:* 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists, causes other than infection should be sought. After relief of pain has been obtained, continued treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange-red dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.

ROCHE

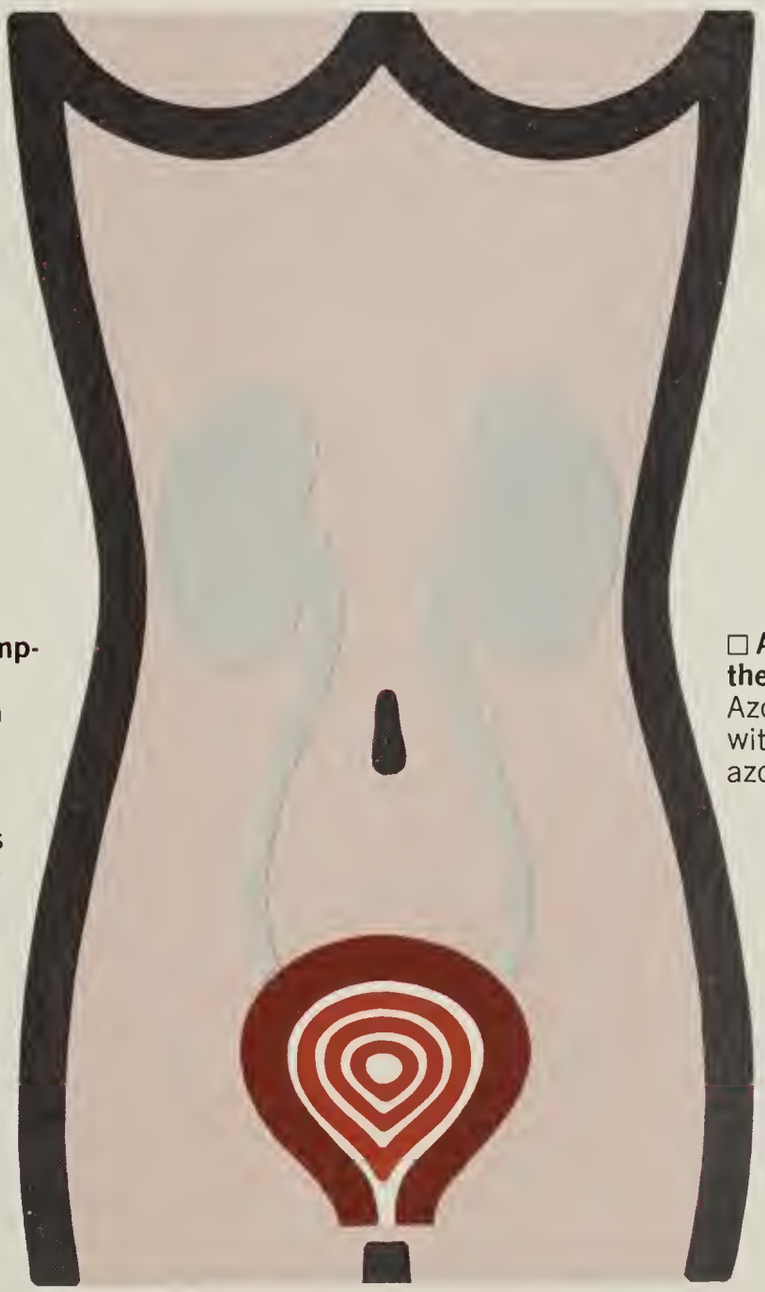
Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

When pain complicates acute cystitis*

Azo Gantanol®

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.

for the pain for the pathogens



☐ **Early relief of painful symptoms** such as burning and discomfort associated with urgency and frequency.

☐ **Effective control of susceptible pathogens** such as *E. coli, Klebsiella-Aerobacter, Staph. aureus, Proteus mirabilis* and, less frequently, *Proteus vulgaris.*

☐ **Appropriate antibacterial therapy:** up to three days with Azo Gantanol, then 11 days with Gantanol® (sulfamethoxazole).

*nonobstructed; due to susceptible organisms

ROCHE

DYAZIDE®

Trademark

Each capsule contains 50 mg. of Dyrenium® (triamterene, SK&F) and 25 mg. of hydrochlorothiazide.

MAKES SENSE

TRIAMTERENE CONSERVES POTASSIUM WHILE HYDROCHLOROTHIAZIDE LOWERS BLOOD PRESSURE

FOR LONG-TERM CONTROL OF HYPERTENSION*

Serum K^+ and BUN should be checked periodically. (See Warnings Section.)



Before prescribing, see complete prescribing information in SK&F literature or *PDR*. The following is a brief summary.

* **Warning**
This fixed combination drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

* **Indications:** *Edema:* That associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. *Mild to moderate hypertension:* Usefulness of the triamterene component is limited to its potassium-sparing effect.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 capsules; in Single Unit Packages of 100 (intended for institutional use only).

SK&F Co., Carolina, P.R. 00630
Subsidiary of SmithKline Corporation

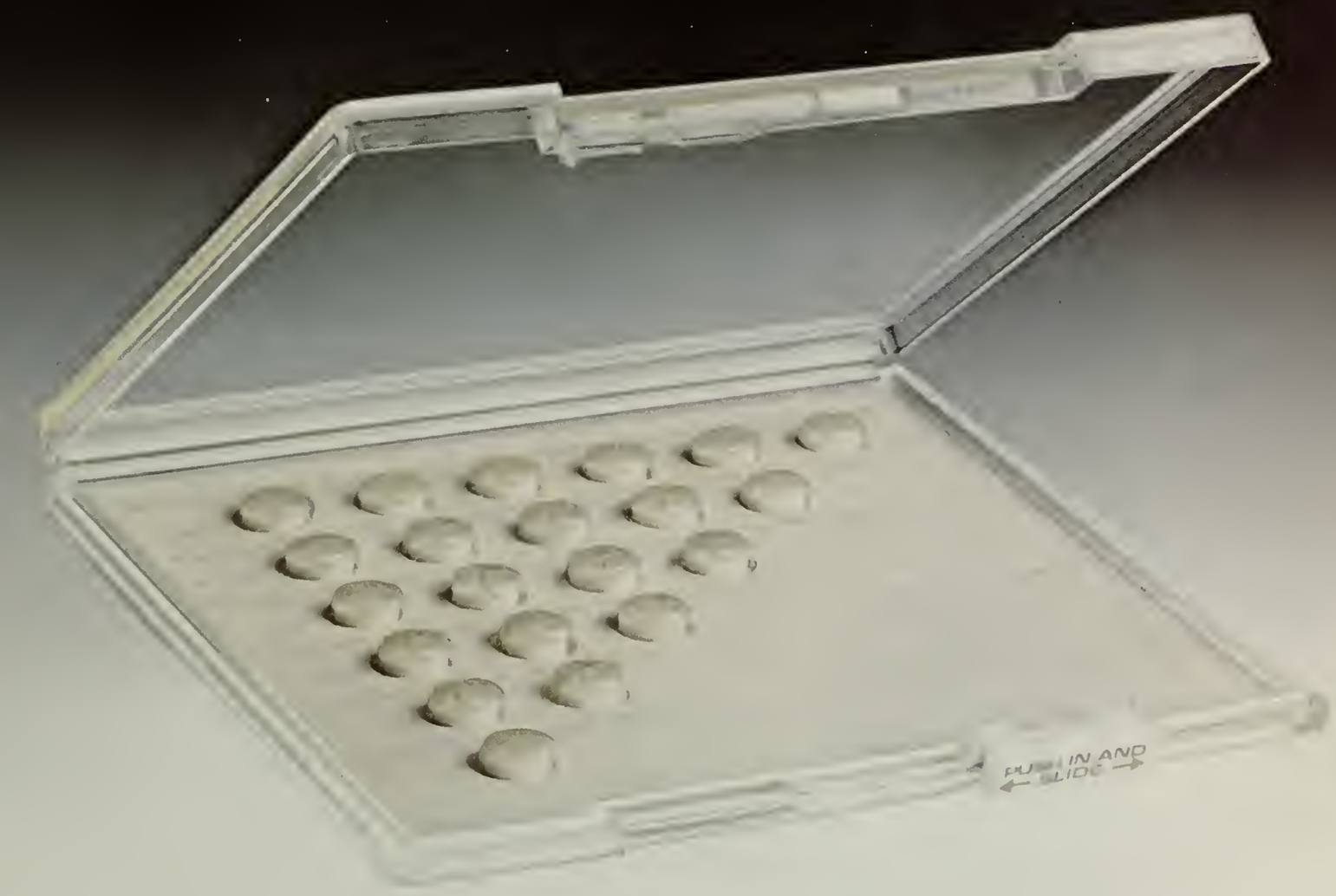
Upjohn

The Upjohn Company, Kalamazoo, Michigan 49001

Medrol® 4 mg Dosepak*

methylprednisolone, Upjohn

The explicit printed dosage instructions that accompany each Dosepak make it easy for the patient to understand and follow the dosage regimen.





Big Balanced Rock, Chiricahua Mountains, Arizona (approx. 1,000 tons)

- Found useful in the management of vertigo* associated with diseases affecting the vestibular system.
- Can relieve nausea and vomiting often associated with vertigo.*
- Usual adult dosage for Antivert/25 for vertigo:* one tablet t.i.d.
- Also available as Antivert (meclizine HCl) 12.5 mg. scored tablets, for dosage convenience and flexibility.
- Antivert/25 (meclizine HCl) 25 mg. *Chewable* Tablets for nausea, vomiting and dizziness associated with motion sickness.

BRIEF SUMMARY OF PRESCRIBING INFORMATION

*INDICATIONS. Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

Effective: Management of nausea and vomiting and dizziness associated with motion sickness.

Possibly Effective: Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation.

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

The administration of meclizine to pregnant rats during the 12-15 day of gestation has produced cleft palate in the offspring. Limited studies using doses of over 100 mg./kg./day in rabbits and 10 mg./kg./day in pigs and monkeys did not show cleft palate. Congeners of meclizine have caused cleft palate in species other than the rat.

Meclizine HCl is contraindicated in individuals who have shown a previous hypersensitivity to it.

WARNINGS. Since drowsiness may, on occasion, occur with use of this drug, patients should be warned of this possibility and cautioned against driving a car or operating dangerous machinery.

Usage in Children: Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

Usage in Pregnancy: See "Contraindications."

ADVERSE REACTIONS. Drowsiness, dry mouth and, on rare occasions, blurred vision have been reported.

More detailed professional information available on request.

ROERIG Pfizer
A division of Pfizer Pharmaceuticals
New York, New York 10017

Antivert®/25
(meclizine HCl) 25 mg. Tablets
for vertigo*

EXECUTIVE COMMITTEE

The Executive Committee meeting of the Arizona Medical Association, Inc., held at the Carefree Inn Hotel, Carefree, AZ. on Friday, March 19, 1976, convened at 9:10 p.m., William C. Scott, M.D., President and Chairman, presiding.

MINUTES

The minutes of the meeting held February 20, 1976 were approved as distributed.

MALPRACTICE ASSESSMENT

Exemptions Requested

IT WAS MOVED AND CARRIED TO GRANT EXEMPTION FROM THE SPECIAL MALPRACTICE ASSESSMENT TO THE FOLLOWING MEMBERS:

Hubert K. Abrams, M.D.
Merrill S. Chernov, M.D.
Ward D. Coffman, Jr., M.D.
Terrence R. Collins, M.D.
Rolland Deputy, M.D.
Bernard B. Dwyer, M.D.
Helen V. Gruhl, M.D.
Helen Johnson
William W. McKinley
Adel Montasir, M.D.
Stephen W. Moore, M.D.
Andrew W. Nichols, M.D.
Horacio Ore'Giron, M.D.
Ramon G. Shoen, M.D.
Carl J. Streicher, M.D.
Marvin Weisbard, M.D.
Carey C. Womble, M.D.
Ahid Zaky, M.D.

Physicians who have chosen not to pay the assessment as of 3/19/76

The following physicians have chosen not to pay the special assessment nor requested exemption as of the close of business on 3 19 76 and therefore, in accordance with the Bylaws will be suspended.

PAUL G. BAUER, M.D.
WILBUR C. BAYHAM, M.D. (partial)
PAUL S. CAUSEY, M.D.
ROBERT B. CLOAR, M.D.
MILTON M. CONNELL, M.D.
EARL S. CRONK, M.D.
MICHAEL M. DAFTARIAN, M.D.
A. HOWARD ERICKSON, M.D.
GEORGE W. GANNON, M.D.
ELDON B. HAMBLIN, M.D.
WILLIAM H. HARPER, M.D.
NOAH H. HARPER, M.D.
NOAH M. KOENIGSBERG, M.D.
JACK L. LOUDERMILK, M.D.
RICHARD A. MELDE, M.D.
WILLIAM O. MINTURN, M.D.
STERLING J. RYERSON, M.D.
TADEAUSZ ZAKRZEWSKI, M.D.

Mohave County
Kenneth F. Conry, M.D.

Pima County
HUGH D. ALLEN, M.D.
LEONARD C. BALDAUF, M.D.
RAYMOND F. BOCK, M.D.
LARRY J. BUCKELS, M.D.
IAN M. CHESSER, M.D.
MICHAEL W. COHEN, M.D.
JAMES J. CORRIGAN, M.D.
BENJAMIN T. EDWARDS, M.D.
RONALD C. HANSEN, M.D.
THOMAS R. HARRIS, M.D.
CHARLES E. HARTER, M.D.
ELMER S. LIGHTNER, M.D.
THOMAS E. NEWMAN, M.D.
LOYD C. PLANTING, M.D.
C. JACK SNIDER, M.D.
ANITA M. STAFFORD, M.D.
PAUL L. STILLMAN, M.D.
LYNN M. TAUSSIG, M.D.
WILLARD R. VAN NOSTRAND, M.D.
ANACLETO C. VELOSO, M.D.
JOHN K. WENHAM, M.D.

Pinal County
James H. Boyd, M.D.
Robert L. Hyde, M.D.

Yuma County
Robert G. Delph, M.D.
Maurice S. Goldman, Jr., M.D.
Jeanne B. Johnson, M.D.

It was noted that George W. Gannon, M.D., Maricopa County and James H. Boyd, M.D., Pinal County, who have not paid the assessment, are delegates to ArMA. It was determined to advise the appropriate county medical society of this fact and ask for replacements.

A.O.M.A. REPRESENTATIVES AS GUEST TO ArMA BOARD MEETINGS

IT WAS MOVED AND CARRIED TO ASK THE PRESIDENT OF THE ARIZONA OSTEOPATHIC MEDICAL ASSOCIATION IF HE WOULD LIKE TO PARTICIPATE IN A RECIPROCAL PROGRAM WHERE THE PRESIDENT OF A.O.M.A., OR A PHYSICIAN REPRESENTATIVE, IS INVITED TO ATTEND ArMA BOARD OF DIRECTORS MEETINGS AND VICE VERSA.

CLAIMS MEDICAL REVIEW COMMITTEE

IT WAS MOVED AND CARRIED TO REIMBURSE MEMBERS OF THE SUBJECT COMMITTEE AT THE RATE OF $50.00 PER HOUR OF ACTUAL TIME SPENT IN MEETING, AND TRAVEL EXPENSE BE PAID FOR AT THE RATE OF FIFTEEN CENTS PER MILE.

INTERPRETATION OF LAB AND X-RAY REPORTS

Dr. Kirschner's letter of 2 25 76 on the subject matter was reviewed.

It was determined to refer this item to the Board of Directors of the Maricopa Foundation for Medical Care and Pima Foundation for Medical Care for their comment and recommendation. Dr. Kirshner is to be thanked for his recommendation.

BASEMENT AREA FOR BOMEX

IT WAS MOVED AND CARRIED TO PROCEED WITH THE COMPLETION OF THE BASEMENT WITH THE UNDERSTANDING THAT IT WILL BE RENTED TO BOMEX THIS FALL WHEN BOMEX FUNDS BECOME AVAILABLE.

ASSOCIATION OF DOCTORS OF SONORA

The letter of 1 23 76 from the subject group dealing with American physicians doing charity work in Mexico was reviewed. It was determined to investigate this further with the Mexican counsel before taking any action.

CONSTITUTIONAL CHANGE

Dr. Manley's proposed resolution on the subject matter was reviewed.

IT WAS MOVED AND CARRIED TO REWRITE THE RESOLUTION AND SUBMIT IT TO THE HOUSE OF DELEGATES FOR THEIR CONSIDERATION.

BLUE SHIELD TASK FORCE

Dr. Shapiro reported on the current status of the National Association of Blue Shield Plan's task force efforts and the several meetings that have occurred and are planned for the near future.

It was decided to wait for joint board meeting on March 27th at which time a decision would be made as to whether the Executive Committee should meet again to discuss the matter further. We are to ask our attorneys to review the matter and report.

Meeting adjourned 10:08 P.M.

William E. Crisp, M.D.
Secretary
by
Bruce E. Robinson
Executive Director

LEGISLATIVE COMMITTEE

Meeting of the Legislative Committee of the Arizona Medical Association, held Saturday, March 20, 1976 at 810 West Bethany Home Road, Phoenix, Arizona, convened at 12:30 p.m., Edward Sattenspiel, M.D., Chairman, presiding.

MINUTES

Minutes of the meeting held Saturday, February 7, 1976 were approved as distributed.

DEFINITION OF TERMS

ACTIVE SUPPORT:	Approval of bill and maximum staff time and financial expenditure (including legal counsel) will be made to achieve enactment.
GENERAL SUPPORT:	Approval of the principle of the bill, but staff time and financial expenditures will be limited.
NO ACTION:	No position has been taken one way or another on the bill.
NON-SUPPORT:	Disapproval of the bill, but staff time and financial expenditure will be limited to defeat the bill.
ACTIVE NON-SUPPORT:	Disapproval of the bill and maximum staff time and financial expenditure (including legal counsel) will be made to achieve defeat of the bill.

PROPOSED LEGISLATION

SB 1011 — Improper experimental research involving humans

This bill defines "experimental research" and prohibits improper experimental research involving humans. The bill would also require that "informed consent" be given by any subject prior to the research which would indicate that the subject comprehends adequately the nature, purpose, procedures, possible attendant risks and discomforts, etc. of the research.

IT WAS MOVED AND CARRIED TO GIVE NON-SUPPORT TO THIS BILL.

SB 1034 — Blood donations by minors

This bill would allow minors who have reached the age of 17 to donate blood.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

SB 1125 — Specialized prepaid health plans - dentistry

This bill provides for the establishment of specialized prepaid health plan organizations for dentistry. The Committee felt that since this bill pertains primarily to dentistry rather than medical care, no action was necessary.

IT WAS MOVED AND CARRIED TO TAKE NO ACTION ON THIS BILL.

HB 2324 — Insurance - public facilities inclusion - alcoholism

This bill relates to insurance and prohibits certain discrimination against certain tax-supported institutions and prescribes benefits for care and treatment of alcoholism under certain contracts.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

HB 2336 — Choice of licensed practitioner

This bill relates to insurance and provides for choice of practitioner by certain policyholders. The insured would have the absolute choice of health providers (physician, psychologist, chiropractor, etc.) and would be allowed benefits accordingly.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SCR 1014 — Compulsory medical injury compensation

This concurrent resolution proposes an amendment to the Arizona Constitution relating to medical injury compensation and provides that the Legislature enact a compusory medical injury compensation law.

IT WAS MOVED AND CARRIED TO REFER THIS BILL TO THE MALPRACTICE INSURANCE CRISIS COMMITTEE.

SB 1363 — Compulsory medical injury compensation

This bill provides for compulsory medical injury compensation; prescribes scope, compensation and procedures; and provides for election of remedies.

IT WAS MOVED AND CARRIED TO REFER THIS BILL TO THE MALPRACTICE INSURANCE CRISIS COMMITTEE.

HB 2388 — Catastrophic medical costs - insurance coverage

This bill establishes within the Department of Insurance an Arizona catastrophic medical costs insurance plan and requires health insurers to offer catastrophic health insurance.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

HB 2350 — Medical insurance - chiropractic service included

This bill provides that chiropractic service be recognized and included for coverage by hospital and medical service insurance corporations.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

HB 2351 — Chiropractic licenses and regulations

This bill prescribes rules and regulations for the licensure and practice of chiropractic.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SB 1146 — Death - pronouncement - confirmation

This bill provides for a statutory definition of death and provides for a confirmation of death by an independent physician in cases of organ transplant under the Uniform Anatomical Gift Act of Arizona. Considerable discussion ensued on the propriety of placing the definition of death in the statutes and well as the confirmation of death.

IT WAS MOVED AND CARRIED TO GENERALLY SUPPORT CONFIRMATION OF DEATH UNDER THE ANATOMICAL GIFT ACT, HOWEVER, TO OPPOSE THE DEFINING OF DEATH IN ARIZONA STATUTES.

SB 1193 — College of Medicine - admissions policy

This bill provides that the Board of Regents may establish rules and regulations concerning residency of incoming classes at the University of Arizona Medical College. The bill sets out percentage requirements as to the number of students which must be admitted from counties other than Maricopa and Pima.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SB 1361 — Certified psychologist - service - exclusion prohibited

This bill provides that benefits for services performed by certified psychologists shall not be excluded from subscription contracts of hospitals and medical service corporations.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SB 1382 — Advertising - permitted - fraudulent

This bill provides that physicians, opticians and pharmacists may advertise.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SB 1411 — Medical graduates - public service

This bill prescribes public service qualification for license to practice medicine. This bill requires graduates of the University of Arizona College of Medicine to complete a 12-month public service program before being granted a license.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SB 1418 — Doctors of Medicine - licensing - regulation

This bill establishes two commissions for the licensing and regulation of Doctors of Medicine, thereby replacing the one agency now existent (BOMEX).

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

HB 2194 — State Boards - rules - regulations - review

This bill provides that certain Boards shall periodically review their rules and regulations and provides for notice, hearing, costs and hearing board members.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

SB 1456 - Prescription drug - substitute

This bill provides for the substitution of generic drugs for prescribed brand name drugs.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON—SUPPORT TO THIS BILL.

HB 2327 — Drug dispensers - drug handlers - permits

This bill provides that the Arizona State Board of Pharmacy shall issue permits for drug dispensing and drug handling and prescribes who may receive permits. Included in the list of those who would be required to obtain permits would be: Doctors of Medicine, Doctors of Osteopathy, Veterinarians, Dentists, Podiatrists, Registered Nurses and Licensed Practical Nurses.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

HB 2329 — Prescription-only drugs - sale - possession

This bill provides that neither a manufacturer's representative nor a wholesaler's representative may sell or be in possession of a prescription-only drug except on the premises of the manufacturer.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

HB 2332 — Uniform Controlled Substance Act

The purpose of this legislation is to: (1) Create a coordinated and codified system of drug control, similar to that utilized at the federal level, which classifies all narcotics and dangerous drugs subject to control into five categories with each schedule having its own criteria for drug placement; (2) Establish a regulatory system for the legitimate handlers of controlled drugs in order to curtail illicit drug diversion; (3) Provide law enforcement tools to improve investigative efforts and provide for interim education and training programs relating to the drug abuse problem.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

SB 1458 — Health care institutions - regulations

This bill provides for the regulation and inspection of health care institutions; prescribes duties of Director of Department of Health Services; prescribes information to be furnished by applicants for permits of construction, modification or licensing of facilities or for certificates of need; prescribes membership in Board of Examiners.

IT WAS MOVED AND CARRIED TO GIVE GENERAL NON-SUPPORT TO THIS BILL UNLESS IT IS LIMITED TO NURSING HOMES.

HB 2325 — Public health - rates and charges

This bill prescribes procedures for filing and review of rates and charges.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL.

HB 2330 — Health institutions - certificates of need

This bill prescribes the content of applications for health care institution construction or modification permits, the circumstances under which such permits shall be granted, the circumstances under which certificates of need shall be required, the content of applications for certificates of need, the procedures for review of certificate of need applications by the authorized local agency and the procedures for review of local agency action by the Director.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THIS BILL IN AMENDED FORM.

HB 2377 — Emergency medical technicians

This bill provides for an additional class of emergency medical technicians, intermediate emergency medical technician, for which 200 hours of training would be necessary.

IT WAS MOVED AND CARRIED TO GIVE GENERAL NON-SUPPORT TO THIS BILL.

HB 2381 — Clinical laboratory personnel licensing

This bill provides for a clinical laboratory personnel advisory committee; prescribes membership, terms, meetings and compensation; prescribes powers and duties; provides for licensing of clinical laboratory personnel, etc.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

OTHER BUSINESS

Mr. Barnett informed the Committee that legislation is under consideration regarding 90-10 Boards, which encompass BOMEX. Boards now under the 90-10 concept use 90 percent of the licensing fees collected for their operational funding. The remaining 10 percent goes to the State treasury. The proposed legislation would require annual legislative appropriation and all monies left over would revert to the State treasury.

Mr. Barnett also informed the Committee that the Department of Commerce bill, HB 2001, has again been introduced.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE NON-SUPPORT TO THIS BILL.

Dr. Chisholm informed the Committee that the Council of Professions has had an amendment to HB 2219 introduced which provides for immunity for peer review. Although physicians are provided immunity through the recently enacted malpractice legislation, it was felt that support of the bill should be offered.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO IMMUNITY FOR PEER REVIEW AS PROPOSED THROUGH THE COUNCIL OF PROFESSIONS.

Discussion ensued regarding the proposed legislation t broaden the prohibition of smoking in certain public areas.

IT WAS MOVED AND CARRIED TO GIVE ACTIVE SUPPORT TO SB 1149.

Meeting adjourned 2:40 p.m.

Respectfully submitted,

Gary L. Barnett

Associate Executive Dir.

New from Lilly/Dista Research

NALFON®
fenoprofen calcium
300-mg.* Pulvules®

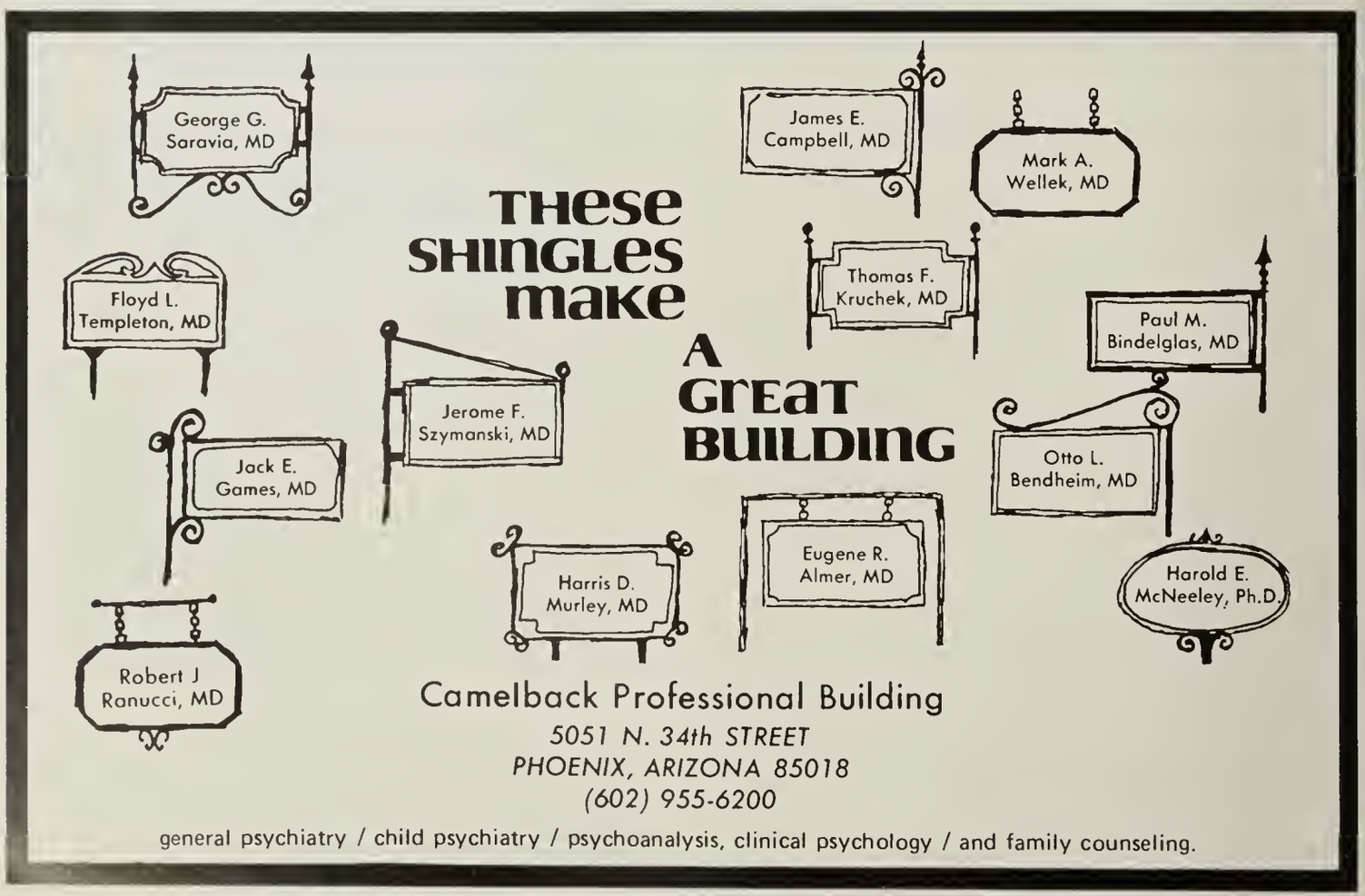
DISTA

Dista Products Company
Division of Eli Lilly and Company
Indianapolis, Indiana 46206

Additional information available to the profession on request.

*Present as 345.9 mg. of the calcium salt of fenoprofen dihydrate equivalent to 300 mg. fenoprofen.

600091



THESE SHINGLES MAKE A GREAT BUILDING

Camelback Professional Building
5051 N. 34th STREET
PHOENIX, ARIZONA 85018
(602) 955-6200

general psychiatry / child psychiatry / psychoanalysis, clinical psychology / and family counseling.

PAVAKEY-300®

(papaverine HCl, 300 mg.)

Sustained-Action Capsules

More efficient management for difficult cases of cerebral and peripheral ischemia associated with arterial spasm.

- **More effective patient compliance.**
- **Significantly less cost per 300 mg., b.i.d. dosage.**

Actions and Uses: The main actions of papaverine are exerted on cardiac and smooth muscle. Like quinidine, papaverine acts directly on the heart muscle to depress conduction and prolong the refractory period. Papaverine relaxes various smooth muscles. This relaxation may be prominent if spasm exists. The muscle cell is not paralyzed by papaverine and still responds to drugs and other stimuli causing contraction. The antispasmodic effect is a direct one and unrelated to muscle innervation. Papaverine is practically devoid of effects on the central nervous system.

Papaverine relaxes the smooth musculature of the larger blood vessels, especially coronary, systemic, peripheral and pulmonary arteries. Perhaps by its direct vasodilating action on cerebral blood vessels papaverine increases cerebral blood flow and decreases cerebral vascular resistance in normal subjects; oxygen consumption is unaltered. These effects may explain the benefit reported from the drug in cerebral vascular encephalopathy.

The direct actions of papaverine on the heart to depress conduction and irritability and to prolong the refractory period of the myocardium provide the basis for its clinical trial in abrogating atrial and ventricular premature systoles and ominous ventricular arrhythmias. The coronary vasodilator action could be an additional factor of therapeutic value when such rhythms are secondary to insufficiency or occlusion of the coronary arteries.

In patients with acute coronary thrombosis, the occurrence of centricular rhythms is serious and requires measures designed to decrease myocardial irritability. Papaverine may have advantages over quinidine used for a similar purpose in that it may be given in an emergency by the intravenous route, does not depress myocardial contraction or cause cinchonism, and produces coronary vasodilation.

Indications: For the relief of cerebral and peripheral ischemia associated with arterial spasm and myocardial ischemia complicated by arrhythmias.

Precaution: Use with caution in patients with glaucoma. Hepatic hypersensitivity has been reported with gastrointestinal symptoms, jaundice, eosinophilia and altered liver function tests. Discontinue medication if these occur.

Adverse Reactions: Although occurring rarely, the reported side effects of papaverine include nausea, abdominal distress, anorexia, constipation, malaise, drowsiness, vertigo, sweating, headache, diarrhea and skin rash.

Dosage: PAVAKEY - 300 ® - One capsule every twelve hours for difficult cases.

Please arrange to provide starter samples and/or complimentary "Starter" prescriptions for:

PAVAKEY-300® (papaverine HCL, 300 mg.)	Samples ☐	"Starter" Rx's ☐

Dr _____ Specialty _____

Street _____

City _____ State _____ Zip _____

Mail to: Key Pharmaceuticals, Inc. 50 N.W. 176th Street, Miami, Florida 33169

KEY PHARMACEUTICALS, INC.
Miami, Florida 33169 (U.S.A.)

ARIZONA MEDICINE

Address all correpondence to the
Journal Offices
810 W. Bethany Home Rd.,
Phoenix, Arizona 85013

Bruce E. Robinson
Business Manager

National Representative
John Murphy
State Medical Journal
Advertising Bureau, Inc.
711 South Boulevard
Oakpark, Illinois 60302

"The material in this journal is not copyrighted. We ask that anyone using material from it note the previous publication in ARIZONA MEDICINE."

CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

1. Manuscripts, including references or bibliography, should be typewritten, double-spaced, on one side of the paper only, and the original and a carbon enclosed.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

5. The Journal reserves the right to edit all material.

6. Reprints will be supplied to the author at printing cost.

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEDICAL EDUCATION.

ARIZONA STATE HOSPITAL, PHOENIX
GOOD SAMARITAN HOSPITAL, PHOENIX
PHOENIX INDIAN MEDICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEDICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARD.

PULMONARY PATHOLOGY

May 22-23, 1976
ArMA Building, Phoenix, AZ

SPONSOR: Arizona Society of Pathologists

CONTACT:
Mary Wood
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

COCONINO COUNTY MEDICAL SOCIETY

Summer Education Seminar
July 24 and 25, 1976
Little America
Flagstaff, AZ

SPONSOR: Coconino County Medical Society

CONTACT:
C. H. Fredell, M.D.
120 West Fine
Flagstaff, AZ 86001

Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

PHYSICIAN TRAINING PROGRAM

October 1, 1975 - June 30, 1976
Tucson Medical Center, Tucson, AZ

SPONSOR: Arthritis Services Program

CONTACT:
Beth Ziebell, Prog. Dir.
3813 E. 2nd St.
Tucson, AZ 85716

Approved for 30 required hours toward the ArMA Certificate in Continuing Medical Education.

STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p.m.
Arizona State Hospital, Phoenix, AZ

SPONSOR: Arizona State Hospital

CONTACT:
Howard E. Wulsin, M.D.
Arizona State Hospital
2500 E. Van Buren
Phoenix, AZ 85008

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wednesday, September - May
4:00 p.m. to 5:30 p.m.
Arizona Medical Center, Tucson, AZ, Rm. 8403

SPONSOR: Department of Psychiatry, U of A
College of Medicine

CONTACT:
Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ per session toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month
Plaza International, Tucson, AZ

SPONSOR: U of A Medical Center, Dept. of Radiology

CONTACT: Irwin M. Freundlich, M.D.
Arizona Medical Center
Dept. of Radiology
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital and Health Center,

SPONSOR: Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice.

CONTACT:
Richard Silver, M.D.
Chairman, Medical Education
and Library Committee
Century Medical Plaza, Suite 160
1701 West St. Mary's Road
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuiing Medical Education.

TUMOR BOARD CONFERENCE

Every Friday at Noon

Kiva Conference Room
Phoenix Memorial Hospital

SPONSOR: Phoenix Memorial Hospital

CONTACT:
Howard Kimball, M.D.
333 West Thomas Road
Phoenix, AZ 85013

Approved for credit toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month

Kiva Conference Room
Phoenix Memorial Hospital

SPONSOR: Medical Staff of Memorial Hospital

CONTACT:

George Scharf, M.D.
1201 South 7th Avenue
Phoenix, AZ 85007

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

PULMONARY DISEASE GRAND ROUNDS

Mondays — 12 Noon

D-5 North Conference Rm., Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Pulmonary Disease Teaching Service
Good Samaritan Hospital

CONTACT:
Bernard E. Levine, M.D.
Pulmonary Function Laboratory
Good Samaritan Hospital
1033 E. McDowell Hospital
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT.
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURG'CAL GRAND ROUNDS 4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

No. 3
As potent as the pain it relieves.

e.g. the pain of
surgical convalescence



NOT TOO LITTLE
- as potent as the pain you need to relieve in patients with fractures, sprains, strains, wounds, contusions, and the pain of surgical convalescence
- unlike acetaminophen/codeine combinations, it does not sacrifice anti-inflammatory action

NOT TOO MUCH
- potent—yet not excessive
- addiction liability low

NOT TOO EXPENSIVE
- brand-name quality, yet reasonable in cost
- readily available in both hospital and local pharmacies

CONVENIENCE
- telephone Rx in most states, up to 5 refills in 6 months at your discretion (where state law permits)

EMPIRIN® COMPOUND WITH CODEINE NO. 3

codeine phosphate* (32.4 mg) gr ½
Each tablet also contains: aspirin gr 3½, phenacetin gr 2½, caffeine gr ½. *Warning—may be habit-forming.

Wellcome

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

When you call our computer, it talks back.

That's right. It answers in a clear, *human* voice. And tells you, step by step, exactly how to record a customer account transaction. Repeats itself to assure accuracy. Then gives you a total balance for final verification.

It's all push-button easy, because it's all done by touch-tone telephone. All you do is call in on a special Valley Bank number. And have a nice little chat with our talking Accounts Management computer.

Something else. Immediately upon cut-off each month, all the paper work is handled automatically. Itemized customer statements stuffed, mailed out. Duplicates, recaps, reports sent to you promptly.

So if you average over 100 customer statements a month, get acquainted with our talking computer. We'll introduce you. Just call us. In Phoenix: 261-1666. In Tucson: 792-7370.

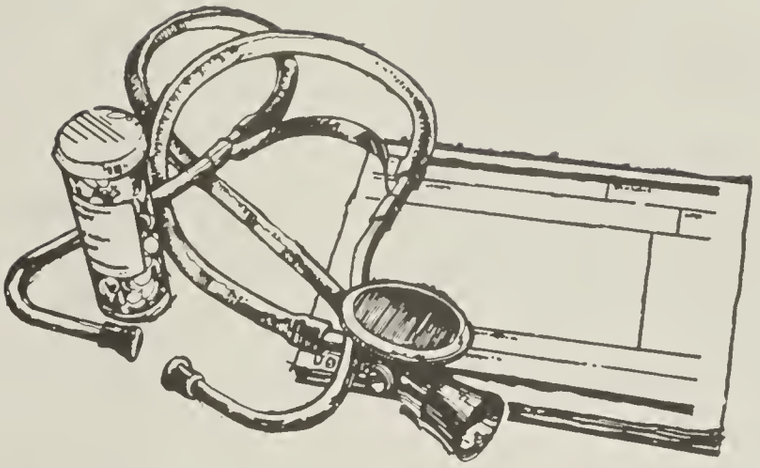


A touch-tone phone puts you in touch.

We go out of our way for you.
Valley National Bank

VALLEY NATIONAL BANK

More than 150 offices throughout Arizona
Deposits insured to $40,000 by Federal Deposit Insurance Corporation



PHYSICIAN . . . YOUR GENERAL PRACTICE COULDN'T BE MORE GENERAL . . . IN THE AIR FORCE.

Our doctors treat everything from neonatology to geriatrics, with modern facilities and a highly trained support staff. A medical career in the Air Force offers many other advantages. Reasonable hours with time to spend with your family. Outstanding Air Force Base facilities. Administrative support. Patient treatment without regard for ability to pay. And an excellent educational program is available if you wish to specialize.



For further information, call or write:

CAPT LARRY MARRS or M/SGT JACK McGIVNEY

2020 South Mill Ave., Suite 115 • Tempe, Arizona 85282

Phone: 261-4971

"Joint Life is the insurance of the '70's"



Doctor, HBA Life's

JOINT LIFE INSURANCE

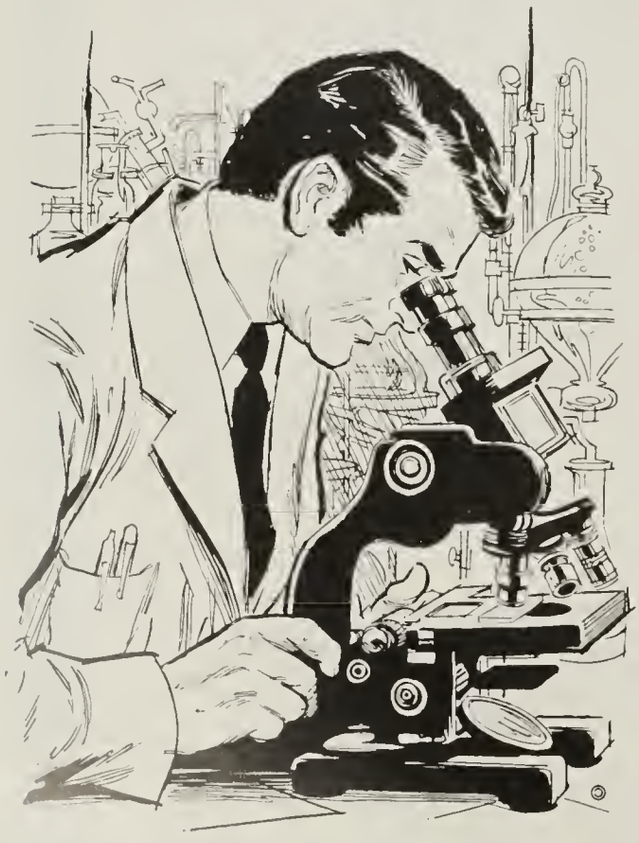
insures two people with only one policy, one low premium

with these advantages:

BUSINESS INSURANCE: Two doctors, partners or associates in a professional corporation, will find this plan a low-cost way to provide funds if one of the two dies. It also may be used by husband and wife or father and son to provide funds to pay off special debts or for any of the other purposes for which life insurance may be used.

LOWER INSURANCE AGE: Often, one insured is somewhat younger than the other. The joint equal age can take years off the age of the older insured. The policy provides for the payment of the face amount upon the death of the first of the two insureds to die.

GUARANTEES SURVIVOR INSURABILITY: The surviving insured, within 90 days and prior to age 70, is guaranteed the right to purchase life insurance. If the surviving insured doesn't exercise this right and dies during this 90-day period, the conversion would automatically be made by the Company and the face amount, less the conversion premium, would be paid to his beneficiary.



DOUBLE FOR SIMULTANEOUS DEATH: If both insureds should die simultaneously, the sum insured upon their deaths would be paid to their beneficiaries.

CONVERTIBLE TO SINGLE LIFE: The Joint Life Insurance may also be converted to single insurance prior to the older insured's 60th birthday. The amount converted can be all on one life or the other or divided between the two as long as each does not take less than $1,000 of life insurance.

An HBA Life Agent would be glad to discuss it further at your convenience.

THE HBA LIFE
INSURANCE COMPANY

1337 N. FIRST ST. • PHOENIX • 258-4885

A Local Company Serving the West Since 1944

THE PSYCHIATRIC INSTITUTE OF MEXICO CITY

In beautiful Lomas de Chapultapec



- ★ U.S. trained bilingual medical staff
- ★ High staff-to-patient ratio
- ★ Conforms to highest U.S. standards of mental health care
- ★ Restful, therapeutic surroundings
- ★ Modern, comfortable accommodations, including private bungalows

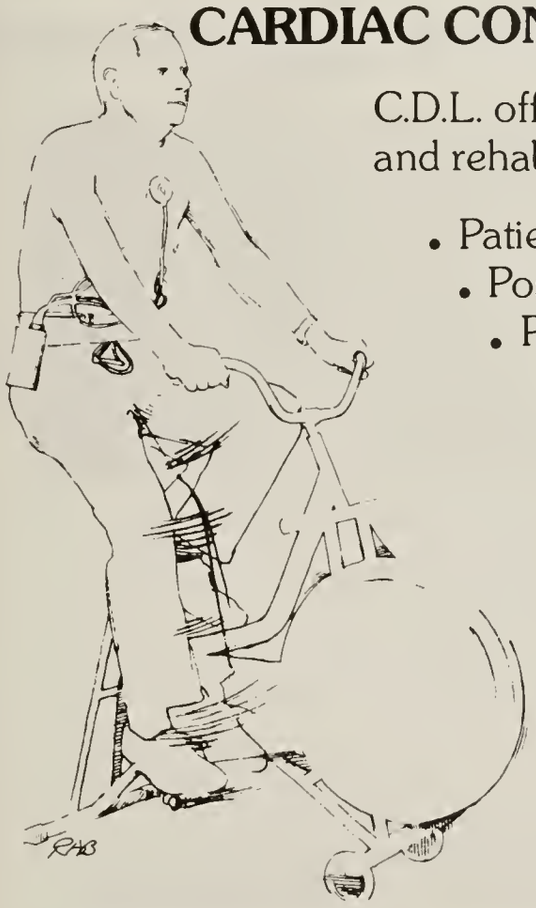
Treatment programs include:

Individual and Group Psychotherapy
Alcohol Detoxification and Rehabilitation
Psychological Testing
Individual Psychoanalysis

For information contact: Rod O'Connor, Administrator, Psychiatric Institute of Mexico City, Paseo de la Reforma 2600, Lomas de Chapultapec, Mexico 10, D.F. Affiliate of The Psychiatric Institutes of America.

CARDIOVASCULAR DIAGNOSTIC LABORATORIES, LTD.

CARDIAC CONDITIONING AND REHABILITATION



C.D.L. offers a program of cardiac conditioning and rehabilitation particularly designed for:

- Patients following cardiac operations
- Post Myocardial Infarction patients
- Patients suffering from heart and blood vessel disease

Evaluation sent to referring physician
Dietary counseling
Vocational rehabilitation
Group counseling
Supervision by trained personnel
Physician in attendance
Covered by major insurance carriers

Refer patients by calling 264-3500, ext. 206.

3800 NORTH CENTRAL AVENUE, SUITE 303 · PHOENIX, ARIZONA 85012

Medical Center X-Ray and Clinical Laboratory

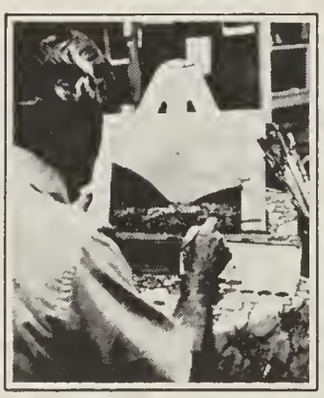
1313 North 2nd Street
Phoenix, Arizona
Phone 258-3484

CLINICAL PATHOLOGY
DIAGNOSTIC X-RAY
PORTABLE X-RAY AND E.K.G. SERVICE
ELECTROCARDIOGRAPHY

R. Lee Foster, M.D., F.A.C.R., F.A.C.P., Director

Diplomates of American Board of Radiology

George B. Kent, Jr., M.D., Consultant Pathologist



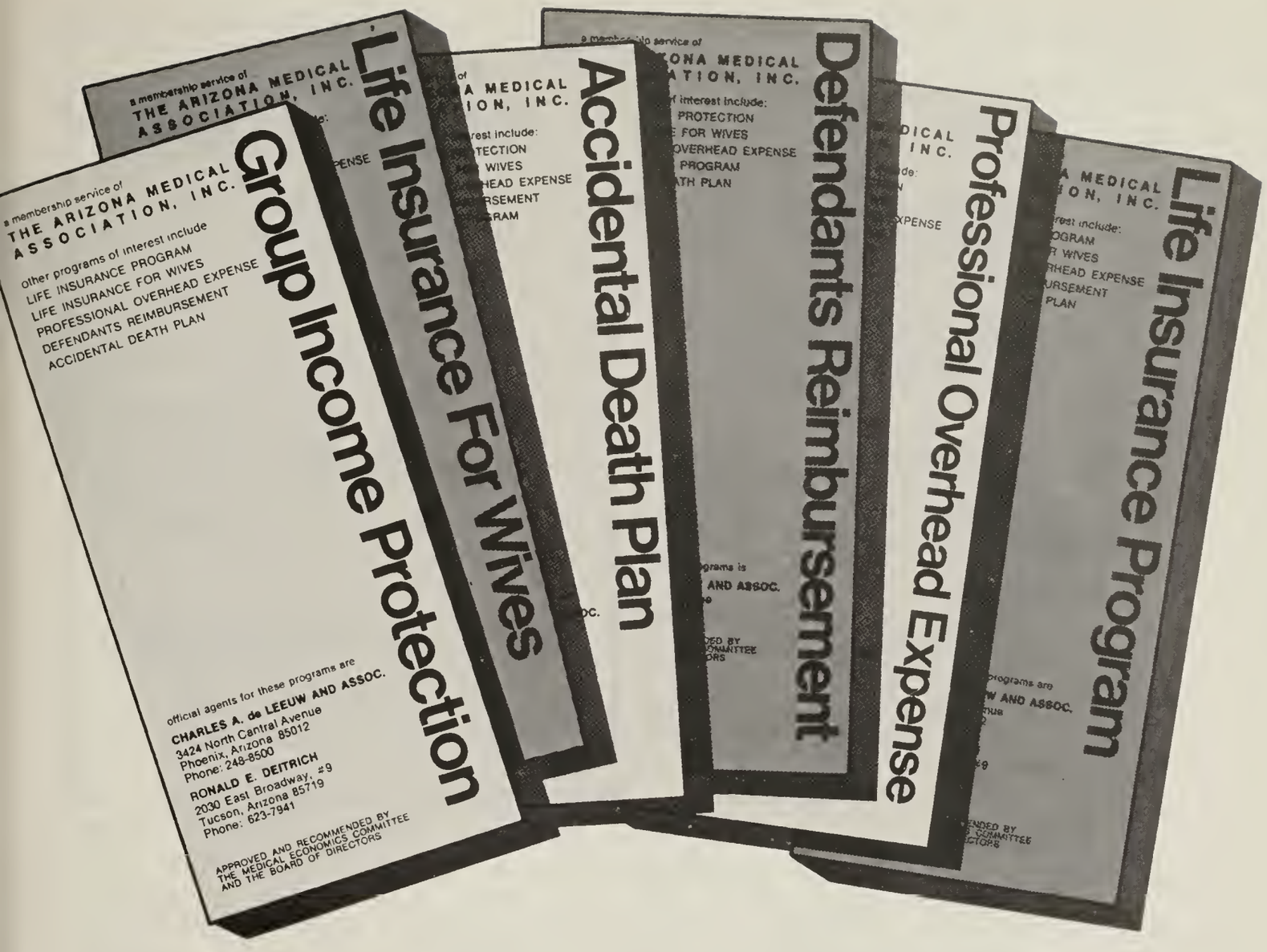



a structured program for the patient.

Every detail for the patient's well-being is carefully planned and evaluated in conjunction with his personal physician

CH
camelback hospital
5055 north thirty-fourth street
phoenix, arizona 85018

A NON-PROFIT COMMUNITY PSYCHIATRIC HOSPITAL



Quality protection

ssociation approved & recommended

1. These 6 plans were especially created for the medical profession under the auspices of The Arizona Medical Association as a unique membership service. Approved by the Medical Economics Committee.

2. In addition to excellence of coverage there is supervision and control by your Association.

3. In many instances...a substantial saving in required premiums.

4. Inquiries may be directed to the Association office or to the licensed resident agents.

THE ARIZONA MEDICAL ASSOCIATION, INC. ORGANIZED 1892 INCORPORATED 1950 PHOENIX, ARIZ.

Charles A. deLeeuw and Assoc.
3424 N. Central Ave.
Phoenix, Az. 85012
248-8500

Ronald Deitrich
2030 E. Broadway, Suite 9
Tucson, Az. 85719
792-1020

YOU WORKED HARD



FOR THAT DIPLOMA..

why not have it laminated?

it will last a lifetime....

THE PLAQUE SHOP

Wood plaques — Ready to hang
No glass to break — Moisture proof
Dirt proof — Impressive.
Our plaques are manufactured locally.

arizona laminating service inc

7231 EAST FIRST AVENUE •
SCOTTSDALE, ARIZONA 85251 •
(602) 945-9338

MEDICAL BOOKSTORE



The only bookstore in Arizona devoted exclusively to books for the medical profession.

MEDICAL BOOKSTORE
College of Medicine
University of Arizona
Tucson, Arizona 85724
Phone: 882-6669

HOBBY HORSE RANCH SCHOOL

A School For Exceptional Children

The Hobby Horse Ranch School is both home and school for a small group of children. It welcomes the child who is mentally retarded and physically handicapped as well as the backward child who suffers no physical handicap.

The Hobby Horse Ranch School is a branch of Fairview School in Fishkill, New York which was established in 1936.

Directors: Blanche C. Lightowler, B.A.
Matthew W. Lightowler

P.O.B. 44, Cortaro, Ariz.



Emergency — our business

Air Evac — serving all Arizonans — can be ordered by any physician anytime to transport a patient anywhere. Medically trained flight crew is airborne in 30 minutes.

(602) 254-7150

AIR EVAC

Samaritan Health Service
Phoenix, Arizona

Pharmacy Directory

FAIRMONT PHARMACY

AN INDEPENDENT
WITH
CHAIN STORE PRICES

3231 East McDowell Road, Phoenix, Arizona

BRidge 5-5719 **Free Delivery**

FREE RADIO EQUIPPED DELIVERY

In Scottsdale call

Lute's Scottsdale Pharmacy

For

PRESCRIPTIONS

3904 N. Scottsdale Rd. 945-8420 - 945-8429

Next to the 1st National Bank

Open 'til 10 p.m. daily — 9 p.m. Sundays

FREE DELIVERY

CALL

254-2606

IF BUSY CALL 252-1573

"Satisfying Customers Since 1920"

- COSMETICS
- SUNDRIES
- SODA BAR
- LIQUOR

MacALPINE'S

DRUG STORE

THE Rexall STORE

2303 N. 7th ST.

DON BRISCOE – PHARMACIST

Classified

DANNY T. SEIVERT
INSURANCE

Professional Programs for Professional Men

70 E. Mitchell Dr., Suite 6
Phoenix, Arizona 85012
263-9090

JOHNSON-BOZZANI
PORSCHE | AUDI

1976
914—912E—911S
Fox or Audi

Call DAVID M. NEAL
SALES & LEASING
For Appointment

320 N. CENTRAL AVENUE
PHOENIX, ARIZONA 85004
PHONE (602) 253-1161





Medical Transcription
For Physicians and
Hospitals

MULLEN MEDICAL SERVICE, INC.

4445 North 36th Street
Phoenix, Arizona 85018
Telephone (602) 955-0763

DOCTORS' CENTRAL DIRECTORY

Helen M. Barrasso, R. N., Director

For Emergencies or in Absence of Your Doctor

CALL 327-7471

At Your Service 24 Hours Daily

2807 East Speedway Tucson, Arizona

"Established 1932"

MICRO-BILLING

The burden-free, low-cost statement service that saves you time, space and money. Positively accurate billings go on time every month regardless of work load, illness, or vacations. No contract to sign, equipment to purchase, or change required to existing posting procedures. Micro-billing also provides positive protection against fire, theft or damage to your valuable records. Call 265-4729, or write American Billing Corp., 4014 N. 7th Street, Phoenix, AZ 85014.

FOR LEASE

In Tucson Medical Park, East I, across street from Tucson Medical Center hospital — 1,694 sq. ft. medical suite with four exam rooms with sinks and cabinets, two doctors' offices, two bathrooms, one shower, large waiting room, large business office and nurse's station with adjacent bookkeeping area. Available approximately June 1, 1976. Call 795-9282.

DOCTOR'S OFFICE BUILDING FOR LEASE

2,165 sq. ft.; excellent location and parking on North Central. Ideal location for family physician. Terms neg. — 718 E. Bethany Home Road. Call 944-4337.

FOR SALE

3,100 square foot office/home in quality area. Doctor-Owner retiring. Entire home designed and built to convert to single medical complex. Presently utilizing 700 square feet for dental operatories and waiting room. Balance as a residence. Entire building is block construction, including interior walls. Lifetime roof.
Call: Hugh Littlebury
JOHN D. NOBLE AND ASSOCIATES
249-2930 or 992-9181

FOR LEASE

New Medical Center across from Yavapai County Hospital in mile high Prescott, Arizona. Only 2 suites remaining. Terrific opportunity for OTO or Dentist. Good lease terms available with doctor owner. Contact Stan Nyquist, Clements Realty (602) 277-7238.

FOR RENT * MISSION BEACH, SAN DIEGO, CA.

Ocean Front Beach Cottage, fully equipped, 2 bedrooms, 1 bath, sleeps 6 with ease. Piano and enclosed patios. 7/31 to 8/31 — $1100.00 or $400 weekly. Rental starts noon Saturday to 10 a.m. following Saturday. $100 security deposit. C. H. Swartz, 1079 Cypress Ave., San Diego, CA 92103 — (714) 295-0210.

SEEKING POSITION

Ophthalmologist, Board eligible, 37, experienced, Univ., Ed., Subsp., Plastics/Path. seeks association with Ophth. or multi-specialty group in Phoenix area. Reply Box 27, Arizona Medicine, 810 W. Bethany Home Road, Phoenix, AZ 85013.

WANTED

Semi-retired physician with Arizona license for established medical center; nice facility. Preferably three or four half days a week or more if you desire. Large winter clientele, 90% geriatric. For further information, call Mesa 832-1746 or 832-1770. Leave a message for Hazel Tyler, R.N.

POSITION AVAILABLE

Full-time ER Physician—for modern, expanding, fully-accredited 467-bed regional medical center with low malpractice ins. rates, salary and fringes negotiable, progressive staff with specialty back up. Excellent schools, college facilities, cultural activities, recreational activities. Contact Dan S. Wilford, Adm., North Mississippi Medical Center, 830 South Gloster St., Tupelo, MS., 38801. (601) 842-3632.

SHARE M.D. OFFICE

Tempe surgeon has contemporary oversized office designed for two M.D.'s. . . . Will sublease remainder for low volume type practice in another speciaty. Shalimar Medical Center, Tempe, in view of Desert Samaritan Hospital. Call 838-3130.

TUCSON

Wilmot Medical Building — adjacent to St. Joseph's Hospital. 720-1620 sq. ft. available. $7.00 sq. ft., includes all utilities, janitorial and maintenance. For information please call (602) 327-5914. Executive Property Management, subsidiary of Schomac Corporation.

Bicentennial Americana

"Pride in the Past
Strength for the Future"
1776-1976

THE EAGLE OR THE TURKEY?

Benjamin Franklin seriously argued that the symbol of the fledgling United States of America should be the turkey, rather than the eagle. Franklin was quite down on the eagle as can be seen from these remarks he made in a letter to a friend:



Turkey-"Bird of Courage"

"He is a bird of bad moral character. He does not get his living honestly. You may have seen him perched on some dead tree near the river, where, too lazy to fish for himself, he watches the labor of the fish hawk and, when that diligent bird has at length taken a fish and is bearing it to his nest for the support of his mate and young ones, the bald eagle pursues and takes it from him."

"The turkey," said Franklin, "is, in comparison, a much more respectable bird and withall a true original native of America. He is (though a little vain and silly, it is true, but not the worse emblem for that) the bird of courage and would not hesitate to attack a grenadier of the British guards who should presume to invade his farmyard with a red coat on."

On this particular subject, Franklin's advice was ignored; instead Congress adopted the eagle and the Great Seal of the United States as our national symbol on June 20, 1782. Had the sage of Philadelphia prevailed, the symbol of the U. S. Bicentennial Society would probably be two turkeys instead of two eagles. Two gobbles for the first 200 years?

The legend of the eagle persists (and probably always will) as a powerful, beautiful, and majestic creature. There is that inspiring line from Jeremiah in the Old Testament: "They that wait upon the Lord shall renew their strength; they shall mount up with wings as eagles; they shall run, and not be weary; and they shall walk and not faint."

And in Samuel, we read, "they were swifter than eagles, they were stronger than lions."

Appropriately, two majestic eagles - one looking proudly to the past, the other confidently to the future - form the symbol for the celebration of the nation's 200th anniversary.

Copyright, 1975 - U. S. Bicentennial Society
Richmond, Virginia

Index to Advertisers

American Billing Corp. 427

Arizona Laminating 426

Armour Pharmaceuticals 338

Air Force 421

Burroughs Wellcome
Empirin Compound 419

Delair Data Systems 345, 346, 347, 348

Camelback Hospital 424

Camelback Professional Bldg. 414

Cardiovascular Diagnostic Labs, Ltd. 423

Classified 427, 428

Doctors Central Directory 427

Eli Lilly & Co.
Darvon 342
Nalfon 414

HBA Life Insurance 422

Hobby Horse Ranch School 426

Johnson Bozzani 427

Key Pharmaceuticals 415

Medical Bookstore 426

Medical Business Consultants 406

Medical Center X-Ray & Clinical Labs 424

Mullen Medical Service 427

National Casualty Co. 425

Pharmacy Directory 427

Pharmaceutical Manuf. Assoc. 340, 341

Psychiatric Institute of Mexico
Mexico City 423

A. H. Robins
Allbee with C 357
Donnatal 358

Roche Labs
Valium Second Cover, 337
Gantanol 406, 407
Librium Third Cover
Fourth Cover

Roerig & Co.
Antivert 410

Roswell Bookbinding 406

Samaritan Health Service 426

Smith, Kline & French
Dyazide 408

Danny T. Sievert
Insurance 427

Upjohn
Dosepak 409

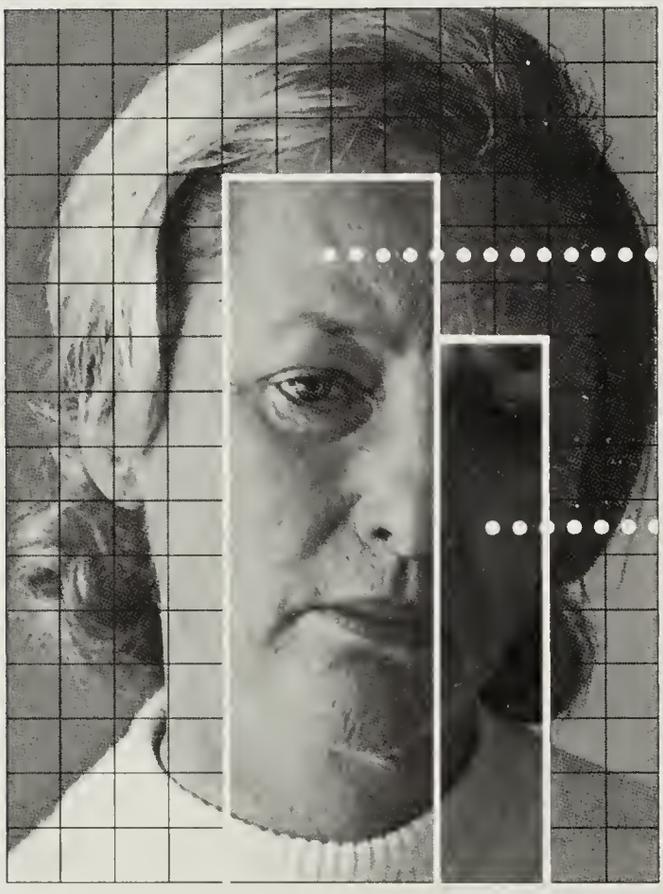
Valley National Bank 420



LIBRARY
U.C. SAN FRANCISCO
JUL 9 1976

ARIZONA MEDICINE

Both often



Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful

respond to one

According to her major
nptoms, she is a psychoneu-
ic patient with severe
xiety. But according to the
scription she gives of her
lings, part of the problem
y sound like depression.
is is because her problem,
hough primarily one of ex-
sive anxiety, is often accom-
nied by depressive symptom-
logy. Valium (diazepam)
provide relief for both—as
excessive anxiety is re-
ved, the depressive symp-
ns associated with it are also
en relieved.

There are other advan-
es in using Valium for the
nagement of psychoneu-
ic anxiety with secondary
pressive symptoms: the
chotherapeutic effect of
lium is pronounced and
id. This means that im-
vement is usually apparent
in the patient within a few days rather than in a week or two, although it may take longer in some patients. In addition, Valium (diazepam) is generally well tolerated; as with most CNS-acting agents, caution patients against hazardous occupations requiring complete mental alertness.

Also, because the psychoneurotic patient's symptoms are often intensified at bedtime, Valium can offer an additional benefit. An *h.s.* dose added to the *b.i.d.* or *t.i.d.* treatment regimen can relieve the excessive anxiety and associated depressive symptoms and thus encourage a more restful night's sleep.



Valium®
(diazepam) IV

2-mg, 5-mg, 10-mg scored tablets

in psychoneurotic
anxiety states
with associated
depressive symptoms

veillance because of their predisposi-
to habituation and dependence. In
gnancy, lactation or women of child-
ring age, weigh potential benefit
inst possible hazard.

cautions: If combined with other psy-
tropics or anticonvulsants, consider
efully pharmacology of agents em-
ved; drugs such as phenothiazines,
cotics, barbiturates, MAO inhibitors
other antidepressants may potentiate
ction. Usual precautions indicated in
ents severely depressed, or with latent
ression, or with suicidal tendencies.
Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

ROCHE
Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

YOU ARE THE JUDGE

the evidence is in.

	LETTER® (sodium levothyroxine, Armour) Tablets	SYNTHROID® (sodium levothyroxine)
Sodium levothyroxine:	YES	YES
Less Expensive:	YES*(Costs 10% less)	NO
Potency Coded Tabs:	YES (Armacode®)	NO
Color-Coded Tabs:	YES	YES
Scored Tabs:	YES	YES
7 Tablet potencies:	YES (0.15 mg. is new)	NO

EXHIBIT "A"

Doctor: Please write your verdict.

*American Druggist Blue Book, 1975

LETTER®

(Sodium Levothyroxine, Armour) Tablets

Armour Pharmaceutical Company, Phoenix, Arizona 85077

JUNE 1976/VOL. 33 No. 6

ARIZONA MEDICINE

JOURNAL OF ARIZONA MEDICAL ASSOCIATION • MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

EDITOR'S PAGE

ARIZONA MEDICINE, TO BE OR NOT TO BE, 459
John W. Kennedy, M.D.

PRESIDENT'S PAGE

PRESIDENTIAL ADDRESS, 460
Edward Sattenspiel, M.D.

EDITORIAL

POSTGRADUATE EDUCATION, 481
C. Herbert Fredell, M.D.

DIRECTORY

Medical Society of the United States and Mexico, 512

Sociedad Medica de Estados Unidos do Northe America y Mexico, 512

Officers and Committees, 512

Index to Advertisers, 526

We salute Edward Sattenspiel, M.D., President, Arizona Medical Association, 1976-77, shown on the cover with his wife Franki.

Published monthly by The Arizona Medical Association, Inc., with offices at 810 W. Bethany Home Rd., Phoenix, Arizona 85013. Subscription $10 a year, single copy $1.00. Second class postage paid at Phoenix, Arizona, and at additional mailing offices.

ORIGINAL ARTICLES

DETECTING COLORECTAL CANCER, 445
Thomas H. Ross, M.D., FACS
James C. M. Johnson, Ph.D.

DIAGNOSTIC PATTERNS IN DISABILITY ARIZONA AND THE NATION, 449
Vernon Kores, M.D.

OBSERVATION OF VIRUS-LIKE PARTICLES IN A CARCINOMA OF THE PENIS, 450
Murray S. Feldstein, M.D.
William C. Bucher, M.D.
Claire M. Payne, M.D.
George W. Drach, M.D.

OBSTETRICS AND GYNECOLOGY

WHERE CAN I FIND OUT ABOUT . . .?, 467
Donald J. Ziehm, M.D.

CLINICAL ONCOLOGY IN ARIZONA

CURRENT TRENDS IN MALIGNANT MELANOMA, 468
Howard B. Kleckner, M.D.
Brian G. M Durie, M.D.
Paul L. Schnur, M.D.

RADIOLOGY CASE OF THE MONTH

CASE NO. 11
John C. Bjelland, M.D.
Tim B. Hunter, M.D.

SEMINARS IN ENDOCRINOLOGY

BLOOD GLUCOSE IN DIABETES: DOES IT HAVE ANY VALUE?, 473
Marshall B. Block, M.D.

SEMINARS IN CHEST MEDICINE

DIAGNOSIS AND MANAGEMENT OF LARYNGOTRACHEO—BRONCHITIS AND EPIGLOTTITIS, 474
Gerald M. Loughlin, M.D.
Lynn M. Taussig, M.D.

RENAL DISEASE

ANTIBIOTICS AND THE KIDNEY, 478
George M. Nikas, M.D.

DEPARTMENT OF HEALTH SERVICES

BUREAU OF HEALTH EDUCATION, 480
Suzanne Dandoy, M.D.

REPORT OF THE HOUSESTAFF SECTION, 482
H. G. Butler, M.D.

IN MEMORIAM, 882
Onie O. Williams, M.D.

ARMA REPORTS, 483

ANNUAL MEETING HIGHLIGHTS

PHOTOS, 486

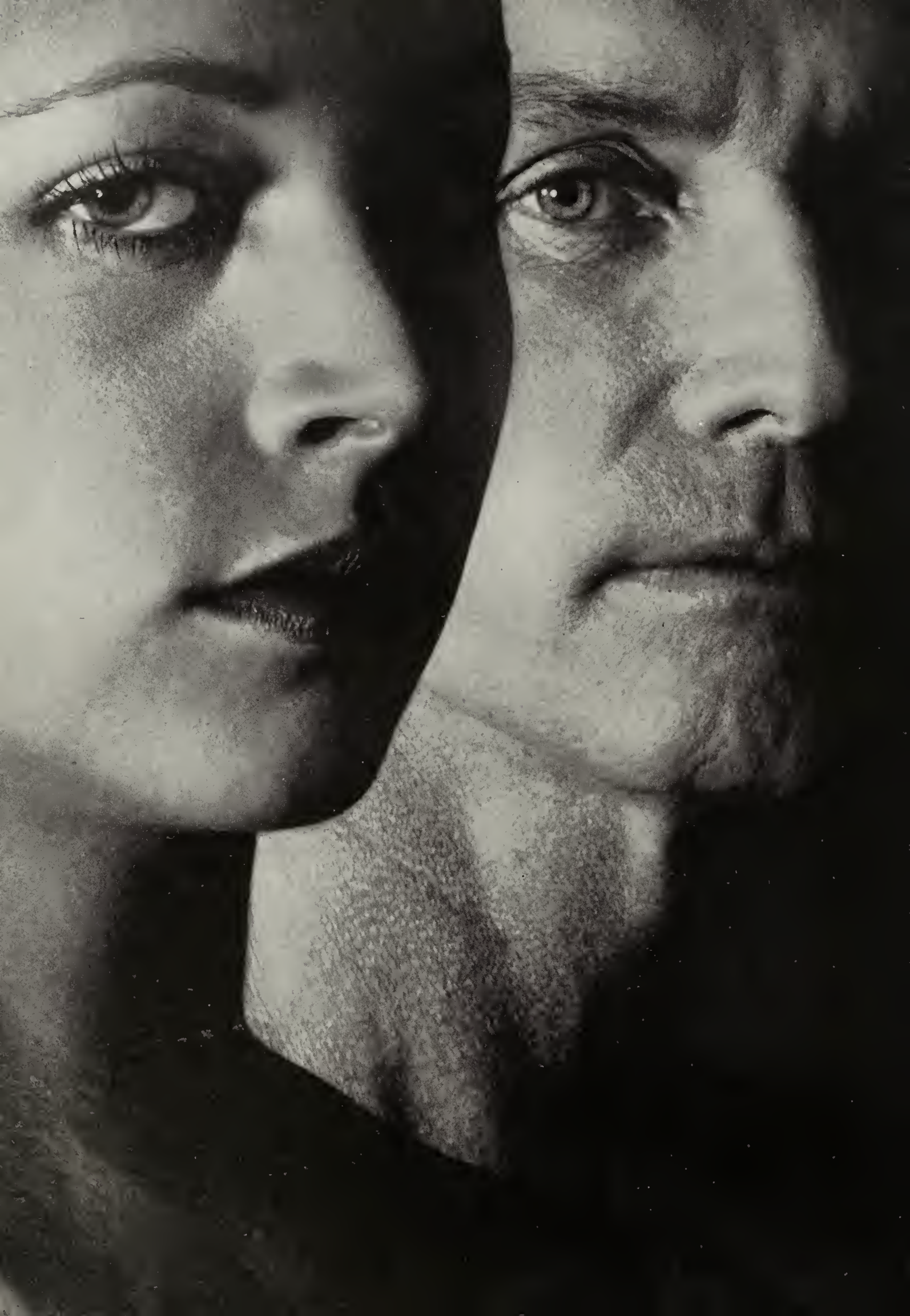
RESUME OF THE HOUSE OF DELEGATES, 490
SPORTS AWARDS, 497

TOPICS OF CURRENT MEDICAL INTEREST, 498
H. Gilbert Crecelius, Ph.D.

ARMA MEDICAL HISTORY

A BICENTENNIAL SALUTE TO HEALTH SERVICES IN THE VERDE VALLEY OF ARIZONA, 500
Martha Leyel
M. E. Linkert

FUTURE MEETINGS, 509



Testing in Humans: Who, Where & When.

the weight of ethical opinion:

Few would disagree that the effectiveness and safety of any therapeutic agent or device must be determined through clinical research.

But now the *practice* of clinical research is under appraisal by Congress, the press and the general public. Who shall administer it? On whom are the products to be tested? Under what circumstances? And how shall results be evaluated and utilized?

The Pharmaceutical Manufacturers Association represents firms that are significantly engaged in the discovery and development of new medicines, medical devices and diagnostic products. Clinical research is essential to their efforts. Consequently, PMA formulated positions which it submitted on July 11, 1975, to the Subcommittee on Health of the Senate Labor and Public Welfare Committee, as its official policy recommendations. Here are the essentials of PMA's current thinking in this vital area.

1. PMA supports the mandate and mission of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research and offers to establish a special committee composed of experts of appropriate disciplines familiar with the industry's research methodology to volunteer its service to the Commission.

2. PMA supports the formation of an independent, expert, broadly based and representative panel to assess the current state of drug innovation and the impact upon it of existing laws, regulations and procedures.

3. When FDA proposes regulations, it should prepare and publish in the *Federal Register* a detailed statement assessing the impact of those regulations on drug and device innovation.

4. PMA proposes that an appropriately qualified medical organization be encouraged to undertake a comprehensive study of the optimum roles and responsibilities of the sponsor and physician when company-sponsored clinical research is performed by independent clinical investigators.

5. PMA recognizes that the physician-investigator has, and should have, the ultimate responsibility for deciding the substance and form of the informed consent to be obtained. However, PMA recommends that the sponsor of the experiment aid the investigator in discharging this important responsibility by providing (1) a document detailing the investigator's responsibilities under FDA regulations with regard to patient consent, and (2) a written description of the relevant facts about the investigational item to be studied, in comprehensible lay language.

6. In the case of children, the sponsor must require that informed consent be obtained from a legally appropriate representative of the participant. Voluntary consent of an older child, who may be capable of understanding, in addition to that of a parent, guardian or other legally responsible person, is advisable. Safety of the drug or device shall have been assessed in adult populations prior to use in children.

7. PMA endorses the general principle that, in the case of the mentally infirm, consent should be sought from both an understanding subject and from a parent or guardian, or in their absence, another legally responsible person.

8. Pharmaceutical manufacturers sponsoring investigations in prisons must take all reasonable care to assure that the facilities and personnel used in the conduct of the investigations are suitable for the protection of participants, and for the avoidance of coercion, with a respect for basic humanitarian principles.

9. Sponsors intending to conduct nontherapeutic clinical trials through the participation of employee volunteers should expand the membership and scope of its existing Medical Research Committee, or establish such an internal Medical Research Committee, with responsibility to approve the consent forms of all volunteers, designs, protocols and the scope of the trial. The Committee should also bear responsibility to ensure full compliance with all procedures intended to protect employee volunteers' rights.

10. Where the sponsor obtains medical information or data on individuals, it shall be accorded the same confidential status as provided in codes of ethics governing health care professionals.

11. PMA and its member firms accept responsibility to aid and encourage appropriate follow-up of human subjects who have received investigational products that cause latent toxicity in animals or, during their use in clinical investigation, are found to cause unexpected and serious adverse effects.

12. PMA supports the exploration and development by its member companies of more systematic surveillance procedures for newly marketed products.

13. When a pharmaceutical manufacturer concludes, on the basis of early clinical trials of a basic new agent, that a new drug application is likely to be submitted, a proposed development plan accompanied by a summary of existing data, would be submitted to the FDA. Following a review of this submission, the FDA, and its Advisory Committee where appropriate, would meet with the sponsor to discuss the development plan. No *formal* FDA approval should be required at this stage. Rather, the emphasis should be on identification of potential problems and questions for the sponsor's further study and resolution as the program develops.

The PMA believes that health professionals as well as the public at large should be made aware of these 13 points in its Policy on Clinical Research. For these recommendations envisage constructive, cooperative action by industry, research institutions, the health professions and government to encourage creative and workable responses to issues involved in the clinical investigation of new products.

P·M·A
Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D. C. 20005

PHYSICIAN:

Laminar Flow Treatment For Your Patient

Avoidance Therapy

Separating sensitive individuals from airborne irritants, is an established practice in the treatment of allergy patients. Now *Enviracaire*, a new laminar flow, HEPA filter clean air unit, provides *unique room/zone* air purification for treatment of allergic respiratory diseases.

Enviracaire's laminar flow air delivery provides an immediate *Pure Air Zone* while simultaneously cleaning the entire room. This personalized protection of the patients' respiratory tract is a breakthrough in the treatment of the patient in the home or the hospital.



HEPA Filtration

The high efficiency particulate air filter is the most efficient filtration device known. (Proven penetration of less than 1% for all allergens as small as 0 3 microns, including bacterial contaminants.)

Odor Removal

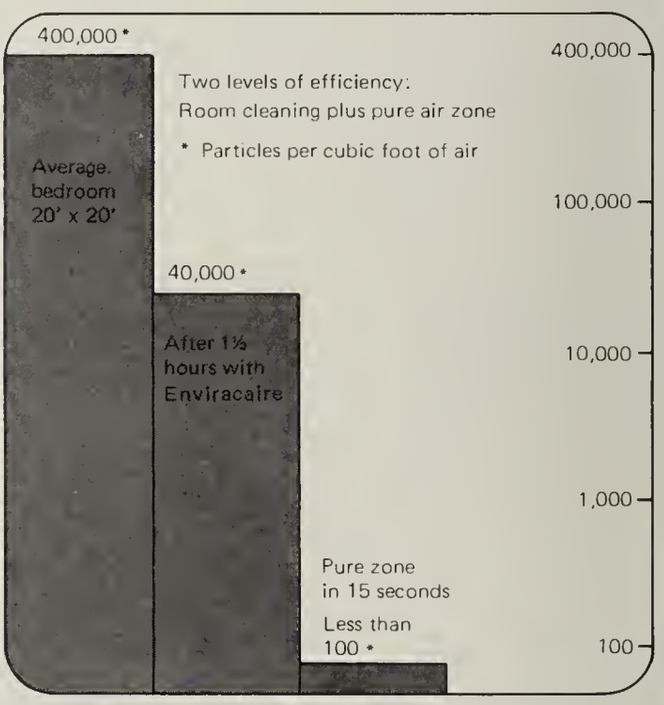
Special high efficiency odor removal cell to reduce asthma triggering chemicals and tobacco smoke.

No Ozone

Unlike electronic air cleaners, the Enviracaire is completely safe,produces no harmful side effects.

Hospital Proven Laminar Flow Benefits Now Available in the Home

Laminar Flow, the most sophisticated and effective clean air technology ever developed, is used world wide in implant, transplant surgery and low resistance patient treatment for the ultimate in sepsis control. This advanced technology is now available for your sensitive home patient.



enviracaire:

Quiet, Convenient and Effective
Another Quality Health Care
Product from Envirco

High Speed, 150 cfm/Low Speed, 120 cfm
21½" high x 24" wide x 14⅝" deep
Weight — 35 lbs.
Electrical — 115 volts, 60 cycle
Accessories — Support Stand w/casters
Replacement Filters

envirco

Division of Bio-Dynamics, Inc

USA P O Box 6468
Albuquerque, N M 87107
505 345-3561

Canada P O Box 182
Burlington, Ont L7R3Y2
416 632-7807

UL This symbol on the product's nameplate means it s listed by Underwriters Laboratories, Inc

PATIENT:

Breathe Easier and Sleep Better

enviracaire: Laminar Flow Clean Air Unit

Envirco, together with specialists in allergy and respiratory care has developed Enviracaire (En-vi-ra-care) a laminar flow clean air unit featuring an exclusive *Pure Air Zone*.



Effective — Three stage filtration including 99% *HEPA* filter, effective odor cell and washable foam prefilter provide unequalled efficiency for maximum reduction of airborne irritants.

Pure Air Zone — Exclusive laminar flow "air displacement" creates an immediate allergen free zone to completely shield patient in addition to reducing overall room irritants.

Quiet — Low noise level and *two speed* operation make the Enviracaire ideal for daily use and for sleeping.

Convenient — Portable, lightweight luggage construction moves easily for use anywhere in the home, office or when traveling; yet looks great in any decor when placed on attractive accessory stand

enviracaire: The Ultimate Personal Clean Air System

(UL) This symbol on the product's nameplate means it's listed by Underwriters Laboratories, Inc

New Relief for Allergies and Asthma

For clear breathing day and night, free from wheezing, coughing, shortness of breath, doctors continually emphasize the importance of eliminating airborne irritants such as dust, tobacco smoke and pollen from homes and offices.





Minimum Maintenance: Case opens easily for cleaning or to replace filters. Long life HEPA filter and odor cell are simply replaced when expended and can be changed in seconds without tools. Prefilter may be vacuumed or washed over and over as necessary.

Comprehensive Warranty and Service: Backed by a full one-year warranty and available only through professional pharmacies and medical equipment specialists who provide immediate service. *See your physician or authorized dealer for additional information on Laminar Flow Treatment, exclusively by Enviracaire.*

Authorized dealer:

MEDICARE INFORMATION CENTER

EVERYBODYS SURGICAL & SICKROOM SUPPLIES INC.

MESA — TEMPE
964-2974
108 W. MAIN ST. — MESA

SCOTTSDALE
994-3075
AT INDIAN SCHOOL & MILLER RD.
(7620 E. INDIAN SCHOOL RD.)

Saffola® is higher in polyunsaturates than Fleischmann's, Imperial or Mazola.



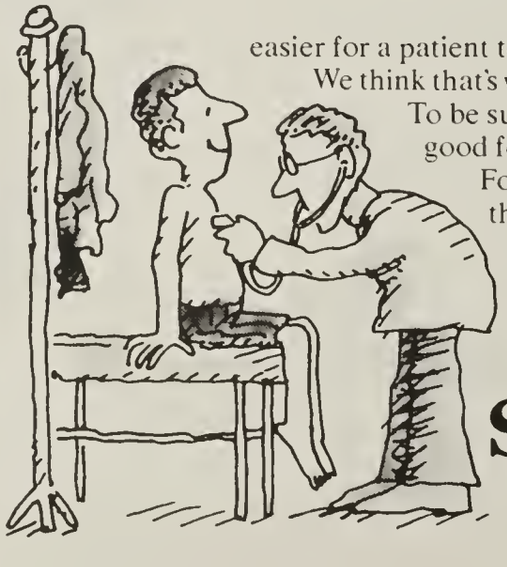
Shouldn't that difference make a difference in what you recommend?

Your patients on modified fat diets can't do better than Saffola. Of the leading margarines, Saffola is highest in polyunsaturates. And no other margarine is lower than Saffola in saturated fats. Because Saffola contains safflower oil—one of nature's most perfect foods. Safflower oil is higher in polyunsaturates than any vegetable oil, including corn oil.

But to your patients, Saffola's good taste is just as important as Saffola's nutrition. The flavor makes it easier for a patient to follow a low cholesterol diet.

We think that's why Saffola is worth recommending.

To be sure your patients are eating what's good for them, and enjoying it.



For comparative information about the nutritional benefits of Saffola, write Consumer Products Division, PVO International Inc., World Trade Center, San Francisco, 94111.

Saffola



PATIENTS AREN'T THE PROBLEM. COLLECTIONS ARE.

At last. An office system for the medical profession. Nobody has to tell you you're drowning in paperwork. Your office is surrounded. By health insurance forms, Medicare, Medicard, patient reports, billing and collections. And there's no end in sight.

But we would like you to breathe a little easier. Because reinforcements can be sent your way to fight through that mounting phalanx of paper tigers. You see, we've developed a real "paper crusher" called the Orion Medical Management System. It's an on-premise, computerized office management system designed specifically to ward off medical paper woes—in less than 24 square feet of office space.

Our sophisticated three-module management system consists of a video station, a central electronic processor and mass storage device, and an automatic printer. We can immediately improve your cash flow, your insurance claim reporting procedures and profits, and your management control. Our English-speaking computer system can be easily learned and operated. And it's offered to you at a price that's amazingly competitive.

If you'd like to get cracking at that tidal wave of medical paperwork, send for reinforcements now. We don't sell computers. Hardware. Or software. But solutions to management problems. Why not declare your independence? Contact us. We just love a good paper war.

CRS

COMPUTER RESOURCE SERVICES

6501 NORTH BLACK CANYON HWY. PHOENIX, ARIZONA 85015 602/242-9121



Providing solutions, not just hardware.

THE PSYCHIATRIC INSTITUTE OF MEXICO CITY

In beautiful Lomas de Chapultapec



- ★ U.S. trained bilingual medical staff
- ★ High staff-to-patient ratio
- ★ Conforms to highest U.S. standards of mental health care
- ★ Restful, therapeutic surroundings
- ★ Modern, comfortable accommodations, including private bungalows

Treatment programs include:

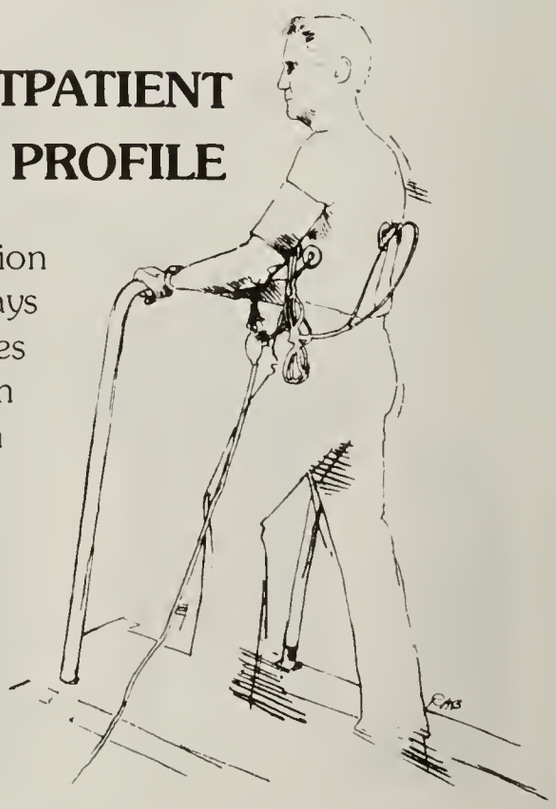
Individual and Group Psychotherapy
Alcohol Detoxification and Rehabilitation
Psychological Testing
Individual Psychoanalysis

For information contact: Rod O'Connor, Administrator, Psychiatric Institute of Mexico City, Paseo de la Reforma 2600, Lomas de Chapultapec, Mexico 10, D.F. Affiliate of The Psychiatric Institutes of America.

CDL

CARDIOVASCULAR DIAGNOSTIC LABORATORIES, LTD.

ADULT AND PEDIATRIC OUTPATIENT CARDIOVASCULAR SCREENING PROFILE



Specialized History and Physical Examination
Chest and Abdominal X-rays
Blood and Urine Chemistries
Electrocardiogram
Vector Electrocardiogram
Stress (treadmill) Electrocardiogram
Cardiac and Peripheral Vascular Ultrasound

Complete Test Results to the Physician within 24 Hours.

Member of Maricopa Foundation

3800 NORTH CENTRAL AVENUE, SUITE 303

PHONE: (602) 264-3500

Famous Fighters



NEOSPORIN® Ointment
(polymyxin B-bacitracin-neomycin)
is a famous fighter, too.

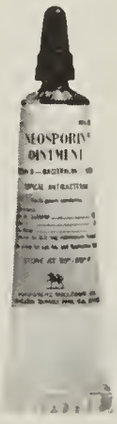
Provides overlapping, broad-spectrum antibacterial action to help combat infection caused by common susceptible pathogens (including staph and strep).

Each gram contains: Aerosporin® brand Polymyxin B Sulfate 5,000 units; zinc bacitracin 400 units; neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

INDICATIONS: Therapeutically (as an adjunct to systemic therapy when indicated) for topical infections, primary or secondary, due to susceptible organisms, as in: • infected burns, skin grafts, surgical incisions, otitis externa • primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection.

Prophylactically, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing. **CONTRAINDICATIONS:** Not for use in the eyes or external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of the components. **WARNING:** Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended. **PRECAUTIONS:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs. **ADVERSE REACTIONS:** Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

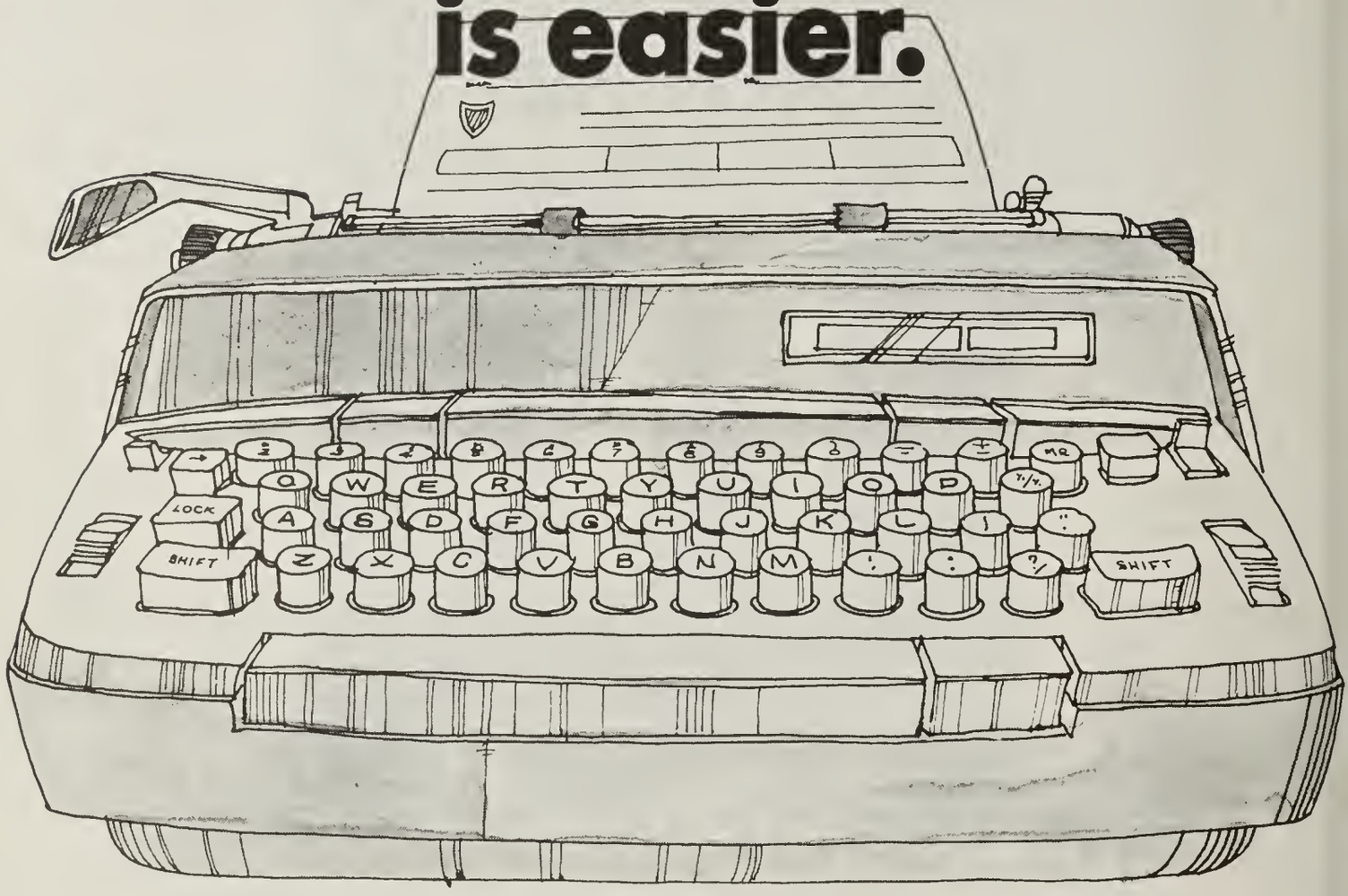
Complete literature available on request from Professional Services Dept. PML.



Wellcome

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Now, filling out Blue Shield claims forms is easier.



Acting upon the recommendation of the AMA and ArMA, we have recently implemented a standardized claims form that can even be used by other insurance carriers. It should help make the job of claims paperwork easier for everyone involved. If you have any questions, phone your Blue Shield representative.

Blue Shield of Arizona

The Leader

PAVAKEY-300®
(papaverine HCl, 300 mg.)

Sustained-Action Capsules

More efficient management for difficult cases of cerebral and peripheral ischemia associated with arterial spasm.

- **More effective patient compliance.**
- **Significantly less cost per 300 mg., b.i.d. dosage.**

Actions and Uses: The main actions of papaverine are exerted on cardiac and smooth muscle. Like quinidine, papaverine acts directly on the heart muscle to depress conduction and prolong the refractory period. Papaverine relaxes various smooth muscles. This relaxation may be prominent if spasm exists. The muscle cell is not paralyzed by papaverine and still responds to drugs and other stimuli causing contraction. The antispasmodic effect is a direct one, and unrelated to muscle innervation. Papaverine is practically devoid of effects on the central nervous system.

Papaverine relaxes the smooth musculature of the larger blood vessels, especially coronary, systemic, peripheral and pulmonary arteries. Perhaps by its direct vasodilating action on cerebral blood vessels, papaverine increases cerebral blood flow and decreases cerebral vascular resistance in normal subjects; oxygen consumption is unaltered. These effects may explain the benefit reported from the drug in cerebral vascular encephalopathy.

The direct actions of papaverine on the heart to depress conduction and irritability and to prolong the refractory period of the myocardium provide the basis for its clinical trial in abrogating atrial and ventricular premature systoles and ominous ventricular arrhythmias. The coronary vasodilator action could be an additional factor of therapeutic value when such rhythms are secondary to insufficiency of occlusion of the coronary arteries.

In patients with acute coronary thrombosis, the occurrence of centricular rhythms is serious and requires measures designed to decrease myocardial irritability. Papaverine may have advantages over quinidine, used for a similar purpose, in that it may be given in an emergency by the intravenous route, does not depress myocardial contraction or cause cinchonism, and produces coronary vasodilation.

Indications: For the relief of cerebral and peripheral ischemia associated with arterial spasm and myocardial ischemia complicated by arrhythmias.

Precaution: Use with caution in patients with glaucoma. Hepatic hypersensitivity has been reported with gastrointestinal symptoms, jaundice, eosinophilia and altered liver function tests. Discontinue medication if these occur.

Adverse Reactions: Although occurring rarely, the reported side effects of papaverine include nausea, abdominal distress, anorexia, constipation, malaise, drowsiness, vertigo, sweating, headache, diarrhea and skin rash.

Dosage: PAVAKEY - 300 ® - One capsule every twelve hours for difficult cases.

Please arrange to provide starter samples and/or complimentary "Starter" prescriptions for:

PAVAKEY-300® (papaverine HCL, 300 mg.)	Samples ☐	"Starter" Rx's ☐

Dr _____ Specialty _____

Street _____

City _____ State _____ Zip _____

Mail to: Key Pharmaceuticals, Inc. 50 N.W. 176th Street, Miami, Florida 33169

KEY PHARMACEUTICALS, INC.
Miami, Florida 33169 (U.S.A.)

One contains aspirin. One doesn't.



Darvocet-N® 100

100 mg. propoxyphene napsylate and 650 mg. acetaminophen

Darvon® Compound-65

65 mg. propoxyphene hydrochloride, 227 mg. aspirin, 162 mg. phenacetin, and 32.4 mg. caffeine

Lilly

Additional information available to the profession on request.
Eli Lilly and Company, Inc., Indianapolis, Indiana 46206

500341

Original Articles

DETECTING COLORECTAL CANCER

THOMAS H. ROSS, M.D., F.A.C.S.

JAMES C. M. JOHNSON, PhD.

A program for the early detection of colorectal cancer is presented. 1103 patients over 40 years of age were tested with multiple stool examinations for occult blood. The positive tested patients yielded 4 patients diagnosed cancer, 12 diverticulosis, 4 hiatus hernia, and 10 with other pathology. None of the cancers detected were found in patients with all positive tests.

Detection of occult blood in the stool is an effective means for the early detection of colorectal disease. It is an amenable and useful routine screening examination in office patients.

INTRODUCTION

Colorectal cancer in man is frequently asymptomatic, requiring special efforts to be detected—particularly in its early stages. Despite decades of constant encouragement, the traditional means of colorectal cancer detection are not being frequently employed.

Detection of occult blood in stool is an effective means for early detection of colorectal cancer. The method described below proved amenable and useful as a routine screening examination in office patients.

BACKGROUND

The medical importance of colorectal cancer scarcely needs emphasis. In incidence, colon and lung cancer are man's most common internal cancers each affecting some 76,000 Americans annually. Approximately 69,000 deaths are recorded annually, due to lung cancer. Colorectal cancer, with an annual mortality of 48,000, is the second deadliest cancer.

As man's longevity increases, so does the

In cooperation with the Professional Education Committee of the Maricopa County (Arizona) Unit of the American Cancer Society. Reprint requests to Dr. Ross, 201 E. Monterey Way, Phoenix, AZ 85012.

incidence of colorectal cancer. Its curability, however, lacks significant change.

Improvement in curability statistics clearly depends upon early detection of neoplasms in the colorectal area before their development is sufficiently advanced to cause symptoms. Unfortunately, the traditional means of diagnosing large intestinal tumors are too costly and cumbersome for widespread use in the asymptomatic patient. Indeed, replies to a questionnaire recently circulated among Maricopa County physicians indicated that less than 20% of asymptomatic patients 40 years of age and older who are receiving physical examinations are being sigmoidoscoped. And even among the patients receiving sigmoidoscopy, a significant number were not being examined to the limit of the scope.

In practice, sigmoidoscopy and barium enema are usually reserved for the symptomatic patient. As a result, they are of limited usefulness as a means of detecting early, small colorectal neoplasms. Although there is no doubt concerning the efficacy of these procedures, their suitability for widespread employment remains limited due to cost or potential discomfort.

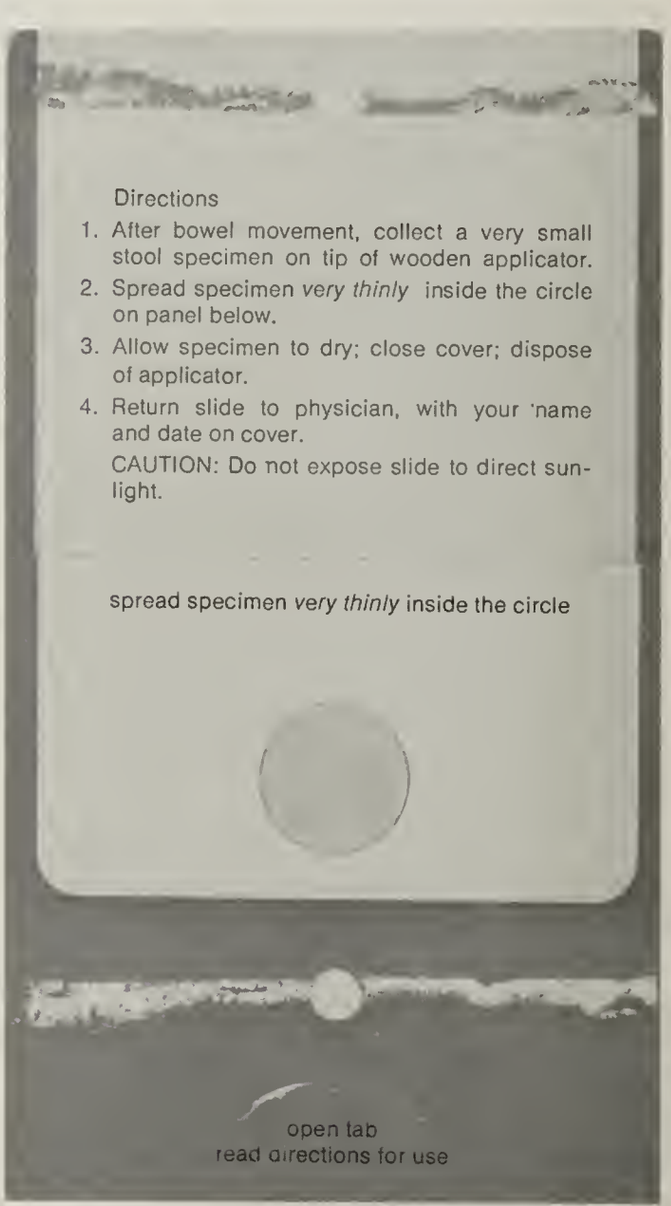
If a detection test is to be useful, it must be employed widely—preferably as a routine screening tool. It should be simple, relatively accurate, painless, and aesthetically tolerable.

Guaiac testing of stool for occult blood by the 'Hemoccult' paper slide method appears to satisfy these criteria.[1,2,3] Although the basic guaiac test is old, having its inception back in 1864 with Van Deen,[4] the compactness and simplicity of 'Hemoccult' paper slides renders the guaiac method simple enough for widespread application.

At approximately the same time that Dr. Greegor[5,6] was preparing to report his experience with 'Hemoccult' slides, the Professional Education Committee of the Maricopa County Unit of the American Cancer Society designed the following program in the hope of accomplishing three objectives:

1. To evaluate this method as a screening test for occult blood in the stool.
2. To emphasize the importance of early detection of colorectal cancer among local physicians.
3. To evaluate the effectiveness of the ACS County Unit organization as an adminstrator for clinical investigations.





METHOD

Forty-six practicing physician volunteers were recruited through announcements at County Medical Society meetings and enclosure of a postage paid reply-card inserted in the Medical Society Bulletin, "The Roundup."

Each participating physician was provided with 'Hemoccult' slides, a short protocol, and data recording sheets. These materials were hand delivered by Cancer Society volunteers who reviewed the protocol with each physician.

The study protocol was intentionally kept simple:

- Only patients 40 years of age and older were to be tested.
- Three slides were to be given to each patient to be used to test three separate stool evacuations on three separate days.
- No dietary restrictions were imposed initially.
- Patients with any positive tests were to be retested on a prescribed high residue, meat-free diet as recommended by Dr. Greegor.
- Patients with any positive tests on re-testing were to be studied further by whatever methods were deemed advisable by the testing physician.

A simple data sheet was prepared on each patient showing:

- the patient's age
- presence of gastrointestinal symptoms
- test results
- diagnosis
- documentation of same

The data sheets were collected periodically by Cancer Society volunteers.

On two occasions, shortly after the initiation of the program, the participating physicians were polled regarding their impression of the acceptability of this screening test. In both instances, physician response indicated enthusiastic acceptance by patients and office personnel, and favorable, but somewhat lower key acceptance by the physicians.

RESULTS

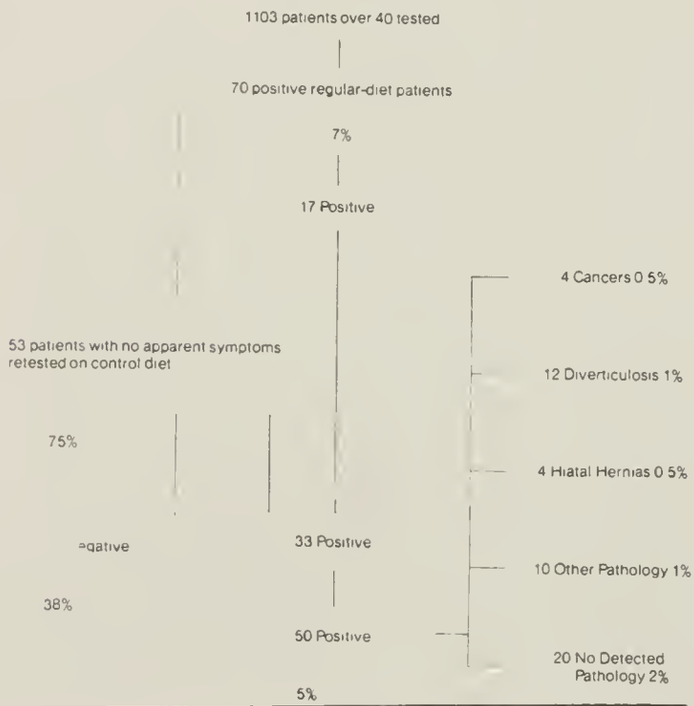
A total of 1187 patients were given slides during the evaluation period. All but 84 returned some slides and were tabulated. Approximately 7% (70 patients) were found to have at least 1 positive test on testing up to 3 stool specimens on their normal diet. Seventy-five percent (53 patients) with positive tests were placed on the meat-free diet of Dr. Greegor.[7] Thirty-eight percent (20 patients) who were previously positive had 3 negative tests on re-testing. Sixty-two percent (33 patients) continued to have one or more positive slides.

We operated on the assumption that those patients who had negative slides on the controlled diet were "false positive" reactors. So by means of diet we were able to reduce the "true positive" reactors from 7 to 5%. In this group of 50 positive reactors, 20 patients were not diagnosed by their investigators. The majority of this undiagnosed group were only tested with 3 slides on their normal diet and failed to return for follow-up exam.

In the diagnosed group, twelve patients were found on barium enema to have diverticulitis. Four patients had bleeding hiatus hernias. A dozen other diagnoses from anal fissure to bleeding gums were found in ten patients. And four colorectal cancers were detected: one in the cecum, two in the transverse colon and one in the rectum. One patient with invasive adenocarcinoma of the colon was discovered one year after three diet-controlled guaiac tests were done and read as negative. Earlier tests of this patient's

Rectal Cancer
Results:

in the Maricopa County Unit, American Cancer Society, Phoenix, Arizona



stool were positive, demonstrating the intermittent nature of bleeding of these neoplasms that both doctors Greegor[5] and Hastings[8] have emphasized.

None of the cancers detected were found in patients with all positive slides. The degree of positivity of the tests was similarly found to be unimportant.

Hemoccult Guaiac Tests
Total N= 1187

	Positive, 1-6 tests with diagnosis	Positive, 1-3 tests no diet no diagnosis	Positive, 4-6 tests with diet no diagnosis	False pos., negative with diet	all negative	negative incomplete	no response	
GI symptoms yes	20 15%	3 2%	4 3%	8 6%	69 53%	21 16%	6 5%	131 100
no	6 1.2%	3 .6%	1 .2%	7 1.3%	305 58%	159 30.3%	44 8.4%	525 100
don't know	4 1%	9 2%	0 0%	5 1%	398 75%	81 15%	34 6%	531 100
	30	15	5	20	772	261	84	

Trace positive tests were not infrequently seen in the tumor group. Slightly over 1% of the total group were found to have a blood releasing disease and denied prior gastrointestinal symptoms.

The average age of the total test group was 55.8 years, while the positive reacting and diagnosed patients averaged 65.9 years. Those with cancer averaged 72.5 years of age.

DISCUSSION

If the curability of colorectal cancer is to be improved it must be detected and treated before the neoplasm becomes symptomatic. Colorectal cancer can be detected by multiple stool testing for occult blood.[5,6,7,8,9,10] The method described has been found to be well accepted, simple, painless and inexpensive rendering it suitable for use as a routine office screening test. In practice, proctosigmoidoscopy and barium enema are frequently reserved for the symptomatic patient. Certainly there are many conscientious physicians who routinely sigmoidoscope patients who present themselves for physical examinations but by our poll most (80%) of the patients so examined are not being proctosigmoidoscoped certainly an extremely small percent of the adult population over 40 years of age receiving annual proctosigmoidoscopy.

CONCLUSION

Multiple testing involving at least three consecutive stool samples, appears to be the most important factor in searching for colorectal neoplasms by the guaiac paper slide method. Non-neoplastic disease not infrequently tests positive on multiple slides. Finally, the Maricopa County Unit of the American Cancer Society demonstrated their ability to provide excellent administrative support for this type of investigation.

ACKNOWLEDGEMENTS

This study was made possible by the efforts of many people whom we would like to publicly thank, particularly:

- Robert M. Stump, M.D. and the other volunteer physician investigators.
- Medical Communications Dept. of St. Joseph Hospital's (Phoenix) for technical assistance.
- Genevieve Hall and the Cancer Volunteers of the Maricopa County Unit of the American Cancer Society.

REFERENCES

1. Ostrow, J.D., Mulvaney, C.A., Hansell, J.R. and Rhodes, R.S. Sensitivity and Reproducibility of Chemical Tests for Fecal Occult Blood with an Emphasis on False-Positive Reactions *American J. Digestive Diseases*, Vol. 18, No. 11, 930-40, November 1973.
2. Christensen, F., Anker, N. and Mondrup, M., Blood in Faeces. A Comparison of the Sensitivity and Reproducibility of Five Chemical Methods *Clinica Chimica Acta*, 57, 23-7, 1974.
3. Stroehlein, R., Fairbanks, D.B., McGill, D.B. and Go, V.L.W. Reliability of Fecal Hemoccult$ Test in Various Gastrointestinal (GI) Disorders, *Gastroenterology*, 68, A-93, April, 1975.
4. Gnauck, R., Occult Blood in The Stool AS A Screening Test for Cancer of The Colon And for Precancerous Polyps, *Z. Gastroenterol* 12:239-50, June, 1974.
5. Greegor, D.H., Occult Blood Testing for Detection of Asymptomatic Colon Cancer *CA* - A Cancer Journal for Clinicians, Vol. 28, No. 1, July 1971.
6. Greegor, D.H., A Progress Report — Detection of Colerectal Cancer Using Guaiac Slides, *CA* - A Cancer Journal for Clinicians, 22(6):360, November December 1972.
7. Greegor, D.H., Detection of Silent Colon Cancer in Routine Examination, *CA* - A Cancer Journal for Clinicians, 19:330-37, November/December, 1969.
8. Hastings, J.B., Mass Screening for Colorectal Cancer, *The American Journal of Surgery*, Vol. 127, February, 1974.
9. Glober, G.A. and Peskoe, S.M., Outpatient Screening for Gastrointestinal Lesions Using Guaiac-Impregnated Slides. *Digestive Diseases*, Vol. 19, No. 5, May 1974.

DIAGNOSTIC PATTERNS IN DISABILITY ARIZONA AND THE NATION

Vernon Kores, M.D.

Under the provisions of the social security disability program, the nation's largest disability plan, a worker under 65 can receive monthly benefits if he or she becomes unable to work due to a mental or physical impairment that has lasted—or is expected to last—at least 12 months or is expected to result in death.

Almost 80 million workers can count on monthly cash benefits in the event of such severe and extended disability. In addition, the dependents of these workers are also eligible for monthly benefits. Nearly 2.4 million workers and 1.8 million dependents are now receiving disability benefits at the rate of more than $6.5 billion a year.

Currently, 23,423 disabled workers in Arizona are collecting $5,467,000 a month in benefits. In addition, 4,527 wives or husbands of disabled workers and 13,454 children of disabled workers in Arizona are receiving $315,000 and $851,000, respectively.

The latest year for which tabulated data is available showing disabled worker diagnostic patterns by State is 1972. Disabled workers in Arizona who began receiving benefits in that year constituted 3,574 of the 455,398 new beneficiaries nationwide.

Dr. Kores is Chief, Medical Consultant, Disability Determination Service, State of Arizona

Table 1 compares the frequency of diagnostic groups in Arizona with the U.S. overall. It shows that diseases of the circulatory system comprised the largest diagnostic group in the country in 1972. Diseases of the musculo-skeletal system and mental disorders, chronic psychoneurotic and personality disorders, were the second and third largest diagnostic groups, respectively. All states do not, however, follow this pattern.

Within these overall diagnostic groups, the most prevalent *primary diagnosis* in both Arizona and the nation in 1972 was chronic ischemic heart disease. Arizona recorded 581 cases that year. The nation's second most common primary diagnosis, osteoarthritis accounted for 202 cases in Arizona. Following these, in order of decreasing national prevalence, was displacement of an intervertebral disc, with Arizona reporting 138 cases, followed by schizophrenia with 92 cases. There were 238 cases of emphysema in Arizona, 85 cases of diabetes mellitus, and rheumatoid arthritis and allied conditions accounted for 128 cases in Arizona that year. Cerebrovascular disease, listed eighth among the most prevalent primary diagnoses in 1972, recorded 47 cases in Arizona; malignant neoplasm of trachea and lung 51 cases; and other diseases ranked tenth with 44 cases.

Additional information about the social security disability program in Arizona can be obtained through the Disability Certification Office, P.O. Box 11980, Phoenix, AZ. 85061. Phone number 264-2644.

Table 1
Social Security Worker Disability Allowances
1972 — Diagnostic Group

Diagnostic Group	U.S. No.	U.S. %	Arizona No.	Arizona %
Diseases of the circulatory system	146,684	32.2	880	24.6
Diseases of the musculo-skeletal system	75,923	16.7	607	17.0
Mental, psychoneurotic, and personality disorders	45,253	9.9	402	11.2
Neoplasms	43,667	9.6	114	3.2
Accidents, poisonings, and violence	31,728	7.0	268	7.5
Diseases of the respiratory system	33,038	7.3	398	11.1
Diseases of the nervous system and sense organs	28,216	6.2	272	7.6
Endocrine system, metabolic, and nutritional diseases	17,352	3.8	114	3.2
Diseases of the digestive system	13,369	2.9	111	3.1
Infective and parasitic diseases	8,627	1.9	76	2.1
Other	11,541	2.5	117	3.3
Total	455,398	100.0	3,574	100.0

*Figures may not total 100% due to rounding.

OBSERVATION OF VIRUS-LIKE PARTICLES IN A CARCINOMA OF THE PENIS

MURRAY S. FELDSTEIN, M.D.
WILLIAM C. BUCHER, M.D.
CLAIRE M. PAYNE, M.D.
GEORGE W. DRACH, M.D.

A circumsized male developed a squamous carcinoma of the penis which contained Papova (DNA) and C-type (RNA) virus-like particles. A typical condyloma acuminatum was found adjacent to the main tumefaction. The possible relationship between condyloma, viruses, and squamous carcinoma is discussed.

INTRODUCTION

Squamous carcinoma of the penis comprises from 0.3 to 0.5 per cent of cancers in men in the United States, but it does occur more frequently in some developing countries.[9] It is a slow growing tumor that invades locally and metastasizes to regional nodes prior to systemic dissemination. Poor hygiene, balanitis, phimosis, and a history of venereal diseases are frequently associated findings.

A number of reports in recent years have speculated that condyloma acuminatum is somehow related to the development of squamous cell carcinoma.[8,10,16,20] The relationship of the viral lesion to carcinoma of the penis is unclear, but periodic case reports warn of the condyloma's possible significance as a precursor of a malignant tumor of the penis.[12,18]

The causative agent of the human venereal wart is known to be a member of the Papova virus group.[6,15] We examined an infiltrating squamous cell carcinoma of the penis under the electron microscope and found particles resembling the Papova virus of condyloma acuminatum and also C-type viruses often associated with human and animal malignancies.

From the Division of Urology, Department of Surgery and the Department of Pathology, University of Arizona, Arizona Medical Center, 1501 N. Campbell, Tucson, Arizona and the Tucson Veterans Administration Hospital, Tucson, Arizona. Instructor in Urology, (Dr. Feldstein); Assistant Professor of Pathology, (Dr. Bucher); Lecturer in Pathology, (Dr. Payne); Associate Professor, Surgery, Section Urology, (Dr. Drach). Reprint requests to : Murray S. Feldstein, M.D., 909 N. San Francisco, Flagstaff, Arizona 86001

CASE REPORT:

E.A., a 58 year old male, was first admitted to the hospital on the 5th of March 1973 because of an enlarging, ulcerating mass on the distal aspect of his penis. He had been circumcised at birth. Three wart-like lesions were noted on his penis while he was in the South Pacific during World War II. These lesions remained unchanged for many years. Several months prior to admission a lesion near the frenulum began to weep fluid, while the other two were replaced by the ulcerated mass that lead to his hospitalization.

The patient had no signs of systemic illness. He denied past episodes of veneral disease and his last sexual contact was more than two years prior to the present admission. He admitted to more than twenty pack-years of cigarette smoking.

The circumcised phallus was tender to palpation and movement. There was an ulcerated foul-smelling, cauliflower-like tumefaction that had destroyed most of the dorsal portion of the glans penis. (Fig. 1.) The distal two-thirds of the penile shaft was brawny and indurated and there were multiple sinus tracts along the shaft, the right side of the scrotum, and the perineum. Adjacent to the main tumefaction was a typical venereal wart measuring 0.5 centimeter in its greatest diameter. There was no inguinal adenopathy.

The lesion was biopsied and the wart excised on the first hospital day. The wart was interpreted as being consistent with a condyloma acuminatum.

Two incisional biopsies from the dorsal margin of the penile lesion demonstrated some similarities with the condyloma acuminatum; however, the epithelial cells exhibited nuclear atypia with mitotic figures and an irregular basal layer. Multiple step sections failed to demonstrate actual invasion of the dermis by these atypical cells. A diagnosis of verrucous carcinoma or Buschke-Lowenstein tumor was made. Total excision was recommended.

The tumor was completely excised. It had invaded the corpora cavernosa to within a centimeter of the base of the penis. Total amputation of the penis with construction of a perineal urethrostomy was accomplished.

Histologic examination revealed a well-differentiated keratinizing squamous cell carcinoma which invaded the sinusoids of the corpora cavernosa. The margins of resection and sinus tracts were free of tumor.



Figure 1
Gross appearance of the lesion at the time of surgery.

A piece of tissue had been excised from the middle of the tumor, fixed in glutaraldehyde, post-fixed in osmium tetroxide, and processed by standard techniques for electron microscopy. Thin sections were subsequently examined with the Hitachi HU-12 electron microscope. Immediate postoperative recovery was uneventful. A chest x-ray obtained two months after surgery revealed a lesion in the left lung not present on earlier studies. The patient underwent thoracotomy and a well-differentiated keratinizing carcinoma was removed. It could not be stated from the material received whether this was a primary or metastiatic lung tumor. The patient remains free from local recurrence or inguinal adenopathy as of December 1974.

ELECTRON MICROSCOPIC OBSERVATIONS

Two types of virus-like particles were observed in the squamous carcinoma. The first particles were found in the nucleus, usually in aggregates. These particles were similar in size and morphology to the papova virus. The mean diameter of the majority of particles measured 31nm with a range of 21-44 nm. Some of the particles appeared to have a polygonal shape and were surrounded by an external capsid (Figure 2, and figure 2 insert).

The second type of virus-like particle was observed budding from the plasma membrane of tumor cells bordering the basement membrane, lying free between the basement membrane and adjacent cells, or surrounded by basement membrane material. These particles were most similar in morphology to the C-Type RNA viruses.[2] Their overall diameter varied from 130-201nm with a central nucleoid from 65 to 180 nm. The majority had an electronlucent nucleoid and would be considered "immature." The particle in Figure 3 was the largest observed. Particles with an electron-dense nucleoid were also observed and considered "mature" (figure 4). No intracytoplasmic particles were observed that could be described as precursors of the extracellular particles.

Tissue from the lung lesion was also examined. No virus-like particles were found.

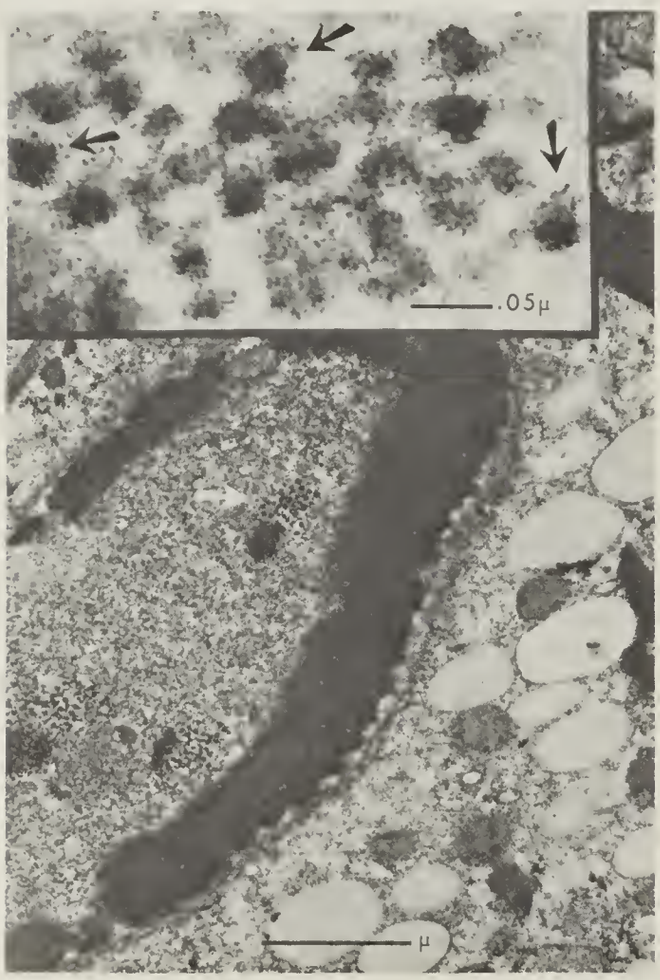


Figure 2

A tumor cell containing groups of intranuclear virus-like particles. The nuclear chromatin is marginated. Numerous highly staining amorphous bodies and closely packed tonofibrils are present in the cytoplasm. Insert: Higher magnification of one group of virus-like particles (white arrow). Note the polygonal shape and capsid-like material associated with some of the particles (black arrows).

DISCUSSION

To our knowledge this patient represents only the 8th reported case of squamous carcinoma of the penis occurring in a male circumcised at birth,[9] and the first report of the observation of two types of virus-like particles in the tumor. The first type of particle described is similar to a group of DNA viruses which include the papilloma virus of man, polyoma virus of mice, and

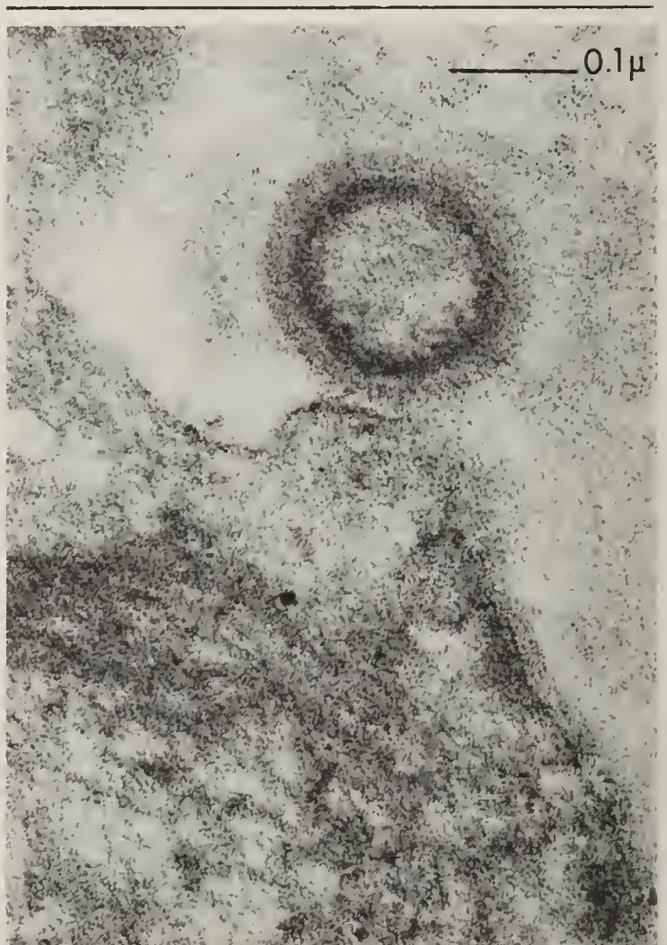


Figure 3

An immature C-type particle is found between the plasma and basement membranes of a basal cell from the squamous carcinoma. Note the high electron density of the peripheral portion of the nucleoid.

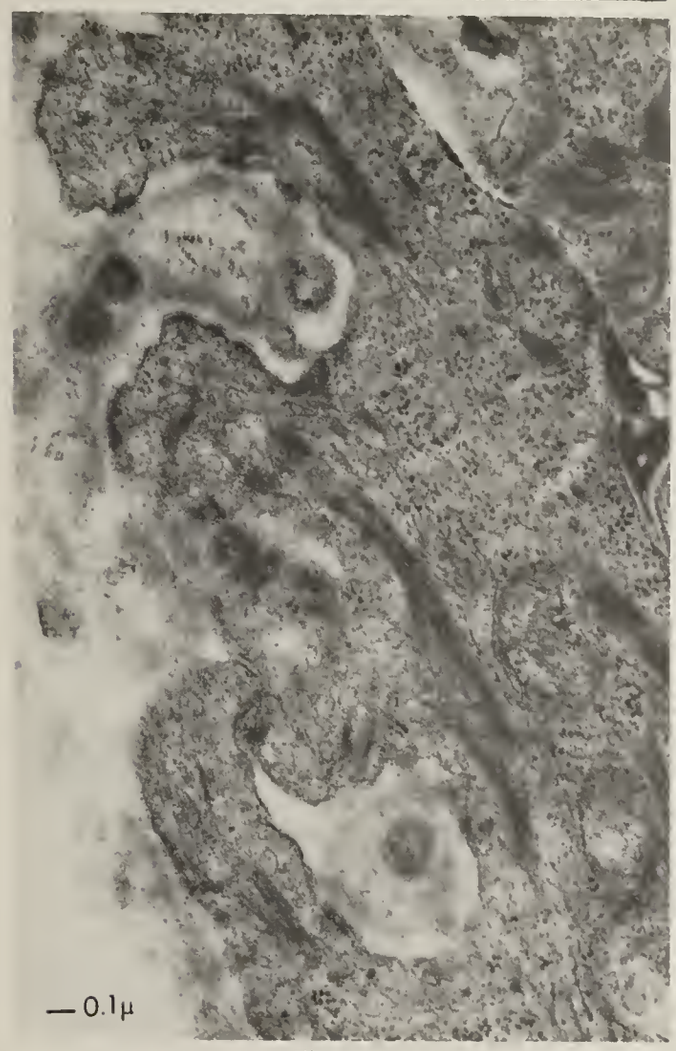


Figure 4

Two mature C-type particles are found within the basement membrane of the basal cells.

vacuolating virus of monkeys.[11] They have been seen in the condyloma acuminatum, or common genital wart.[6,15] The second type of particle resembles the C-type virus, an oncornavirus associated with avian sarcomas and murine leukemias.[1] They have been observed in biopsy specimens from human carcinomas of the renal pelvis,[7] breast,[19] and lymph node specimens and bone marrow aspirates from patients with leukemia and lymphoma.[4] They have also been identified from tissue culture material of human liposarcomas[13] and lymphomas.[17]

Although the particles observed here morphologically resemble C-type particles, they do not meet the size criteria established by Dalton.[2] Some of the C-type particles appear to be twice as large as the classical C-type virus in animals. Larger particles similar to C-type particles have recently been seen in various stages of formation at the surface of human leukemic lymphocytes.[14] They were 4 to 5 times larger than the classical C-type viruses seen in animals. Although the large virus-like particles can sometimes be confused with mycoplasma, the large C-type particles described here do not fit the morphological criteria for any previously described mycoplasma.[3,5] It is possible the larger size may represent an adaptation of C-type viruses to the human species.

Electron microscopic demonstration of virus-like particles in a tumor cannot be used to infer etiologic significance. However, it now appears that there may be a closer relationship of such particles to the entitities of condyloma acuminatum, Buschke-Lowenstein tumor, and squamous carcinoma of the penis. Our observations lend support in this regard and we hope they will stimulate further work in this area.

ACKNOWLEDGEMENT

The authors are indebted to Dr. Frederick T. Kraus, Assoc. Pathologists, St. Lukes Hospital, St. Louis, Missouri, for reviewing the pathologic material.

BIBLIOGRAPHY

1. Bernhard, W.: The detection and study of tumor viruses with the electron microscope, *Cancer Res. 20:* 712, 1960.
2. Dalton, A.J.: RNA tumor viruses-terminology and ultrastructural aspects of virion morphology and replication, *J. Natl. Cancer Inst. 49:* 323, 1972.
3. Dmochowski, L., Taylor, H.G., Grey C., Dreyer, D., Sykes, J., Langford, P., Rogers, T., Schullenberger C., and Howe, C.: Viruses and mycoplasma (PPLO) in human leukemia, *Cancer 18*: 1345, 1965.
4. Dmochowski, L., Tokichi, Y., Grey, Hales, R., Langford, P., Taylor, H.G., Freireich, E., Shullenberger, C., Shiveley, J., and Howe, C.: Electron microscopic studies of human leukemia and lymphoma, *Cancer 20*: 760, 1967.
5. Domermuth C., Nielsen, M., Freundt, E., and Birch-Andersen, A.: Ultrastructure of mycoplasma species, *J. Bacteriol. 88*: 727, 1964.
6. Dunn, A.E.G., and Ogilvie, M.: Intranuclear virus particles in human genital wart tissue: Observations on the ultrastructure of epidermal layer, *J. Ultrastruct. Res. 22*: 282, 1968.
7. Elliot, A., Fraley, E., Cleveland, P., Castro, A., and Stein, N.: Isolation of RNA virus from papillary tumors of the human renal pelvis, *Science 179*: 393, 1973.
8. Friedberg, M.J., and Serlin, O.: Condyloma Acuminatum: Its association with malignancy, *Dis. Colon Rectum 6*: 352, 1963.
9. Kaufman, J., and Sternberg, T.: Carcinoma of the penis in a circumcised man, *J. Urol. 90*: 449, 1963.
10. Kovi, J., Tillman, R.L., and Lee, S.M.: Malignant transformation of condyloma acuminatum, *Amer. J. Clin. Path. 61*: 702, 1974.
11. Melnick, J.: Papova virus group, *Science 135*: 1128, 1962.
12. Moriame, G.: Transformation maligne de' vegetation veneriennes de la verge, *Arch. belges derm et syph 6*: 175, 1950.
13. Morton, D., Hall, W., and Malmgren, R.: Human liposarcomas: Tissue cultures containing foci of transformed cells with viral particles, *Science 165*: 813, 1969.
14. Narang, H.K.: Surface particles on leukemic lymphocytes in humans, *Cancer Res. 33*: 3216, 1973.
15. Oriel, J.D., and Almeida, J.: Demonstration of virus particles in human genital warts, *Br. J. Vener. Dis. 46*: 37, 1970.
16. Oriel, J.D., and Whimster, I.W.: Carcinoma *in situ* associated with virus-containing anal warts, *Br. J. Derm. 84*: 71, 1971.
17. Priori, E., Dmochowski, L., Myers, B., and Wilbur, J.: Constant production of type C virus particles in a continuous tissue culture derived from pleural effusion cells of a lymphoma patient, *Nature New Biol. 232*: 61, 1971.
18. Rhatigan, R., Jimenez, S., and Chopskie, E.: Condyloma acuminatum and carcinoma of the penis, *South Med. J. 65*: 423, 1972.
19. Seman, G., Gallager, H., Lukeman, J., and Dmochowski, L.: Studies on the presence of particles resembling RNA virus particles in human breast tumors, pleural effusions, their tissue cultures, and milk, *Cancer 28*: 1431, 1971.
20. Siegel, A.: Malignant transformation of condyloma acuminatum: Review of the literature and report of a case, *Amer. J. Surg. 103*: 613, 1962.

MANAGEMENT ADVICE



PHILIP KWART

MEMBER SMD SOCIETY OF MEDICAL DENTAL MANAGEMENT CONSULTANTS

Practice management counseling and personal financial planning

•

Objective review of proposed investments. (We do not *sell* investments, real estate or insurance).

•

Evaluation and improvement of collection methods.

•

Cost effectiveness surveys of your practice.

•

Facility design and feasibility studies.

MEDICAL BUSINESS CONSULTANTS

3225 North Central Avenue, Suite 300-B
Phoenix, Arizona 85012 Phone (602) 264-3803

WE BIND YOUR PERIODICALS

Preserve your reference journals as beautifully Bound Books. Choose from 30 different colors of durable Library Buckram or Imitation Leather.

$8.00 per volume, including name imprint

Inquire about quantity discounts.

Free local pick up and delivery on 10 volumes or more.

ROSWELL BOOKBINDING

2614 North 29th Avenue
PHOENIX, ARIZONA 85009
272-9338

Before prescribing, please consult complete product information, a summary of which follows:

Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli, Klebsiella-Aerobacter, Staphylococcus aureus, Proteus mirabilis,* and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note: Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with G.I. disturbances.

Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.

Dosage: Azo Gantanol is intended for the acute, painful phase of urinary tract infections. *Usual adult dosage:* 2 Gm (4 tabs) initially, then 1 Gm (2 tabs) B.I.D. for up to 3 days. If pain persists, causes other than infection should be sought. After relief of pain has been obtained, continued treatment with Gantanol (sulfamethoxazole) may be considered.

NOTE: Patients should be told that the orange-red dye (phenazopyridine HCl) will color the urine.

Supplied: Tablets, red, film-coated, each containing 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl—bottles of 100 and 500.

ROCHE

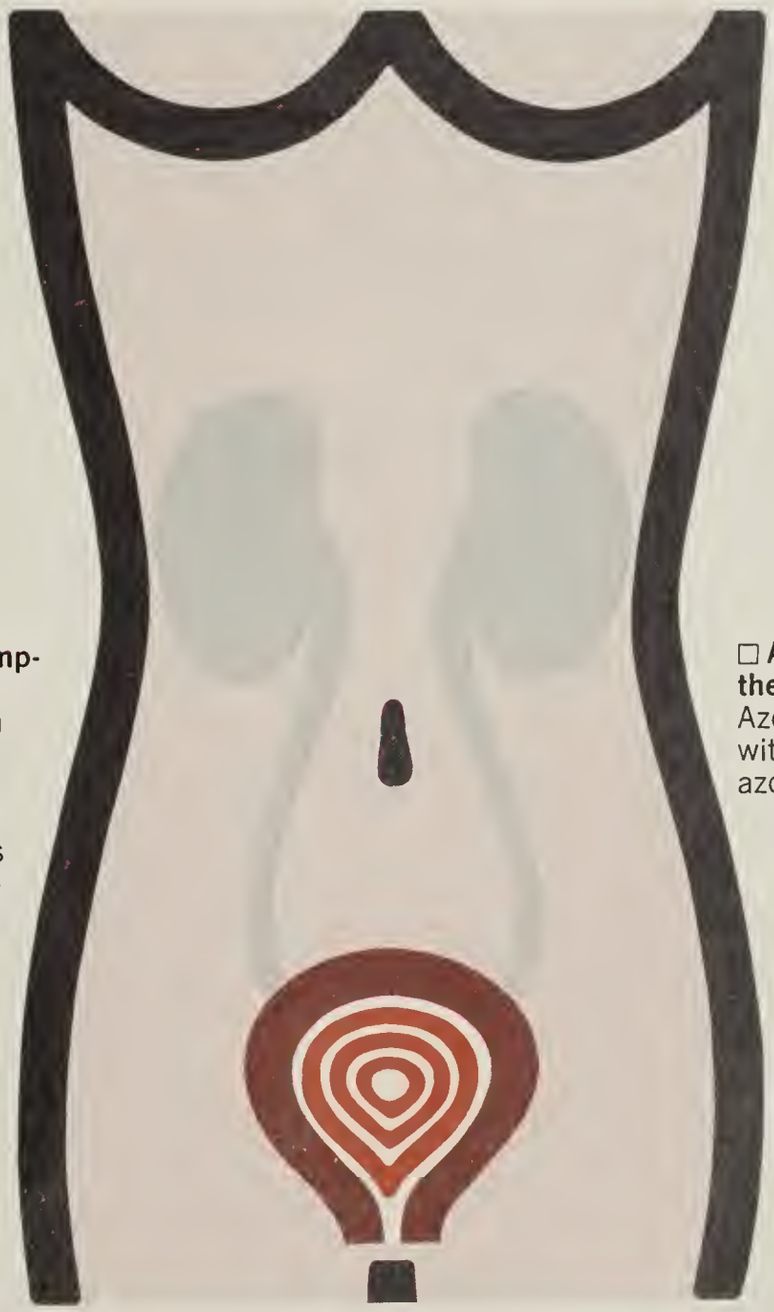
Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

When pain complicates acute cystitis*

Azo Gantanol®

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.

for the pain for the pathogens



☐ **Early relief of painful symptoms** such as burning and discomfort associated with urgency and frequency.

☐ **Effective control of susceptible pathogens** such as *E. coli, Klebsiella-Aerobacter, Staph. aureus, Proteus mirabilis* and, less frequently, *Proteus vulgaris.*

☐ **Appropriate antibacterial therapy:** up to three days with Azo Gantanol, then 11 days with Gantanol® (sulfamethoxazole).

*nonobstructed; due to susceptible organisms

ROCHE

DYAZIDE®

Trademark

Each capsule contains 50 mg. of Dyrenium® (triamterene, SK&F) and 25 mg. of hydrochlorothiazide.

MAKES SENSE

TRIAMTERENE CONSERVES POTASSIUM WHILE HYDROCHLOROTHIAZIDE LOWERS BLOOD PRESSURE

FOR LONG-TERM CONTROL OF HYPERTENSION*

Serum K^+ and BUN should be checked periodically. (See Warnings Section.)



Before prescribing, see complete prescribing information in SK&F literature or *PDR*. The following is a brief summary.

* **Warning**
This fixed combination drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

* **Indications:** *Edema:* That associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. *Mild to moderate hypertension:* Usefulness of the triamterene component is limited to its potassium-sparing effect.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 capsules; in Single Unit Packages of 100 (intended for institutional use only).

SK&F Co., Carolina, P.R. 00630
Subsidiary of SmithKline Corporation

Upjohn

The Upjohn Company, Kalamazoo, Michigan 49001

Medrol® 4 mg Dosepak*

methylprednisolone, Upjohn

The explicit printed dosage instructions that accompany each Dosepak make it easy for the patient to understand and follow the dosage regimen.



Internal



Big Balanced Rock, Chiricahua Mountains, Arizona (approx. 1,000 tons)

- Found useful in the management of vertigo* associated with diseases affecting the vestibular system.
- Can relieve nausea and vomiting often associated with vertigo.*
- Usual adult dosage for Antivert/25 for vertigo:* one tablet t.i.d.
- Also available as Antivert (meclizine HCl) 12.5 mg. scored tablets, for dosage convenience and flexibility.
- Antivert/25 (meclizine HCl) 25 mg. *Chewable* Tablets for nausea, vomiting and dizziness associated with motion sickness.

BRIEF SUMMARY OF PRESCRIBING INFORMATION

*INDICATIONS. Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

Effective: Management of nausea and vomiting and dizziness associated with motion sickness.

Possibly Effective: Management of vertigo associated with diseases affecting the vestibular system.

Final classification of the less than effective indications requires further investigation.

CONTRAINDICATIONS. Administration of Antivert (meclizine HCl) during pregnancy or to women who may become pregnant is contraindicated in view of the teratogenic effect of the drug in rats.

The administration of meclizine to pregnant rats during the 12-15 day of gestation has produced cleft palate in the offspring. Limited studies using doses of over 100 mg./kg./day in rabbits and 10 mg./kg./day in pigs and monkeys did not show cleft palate. Congeners of meclizine have caused cleft palate in species other than the rat.

Meclizine HCl is contraindicated in individuals who have shown a previous hypersensitivity to it.

WARNINGS. Since drowsiness may, on occasion, occur with use of this drug, patients should be warned of this possibility and cautioned against driving a car or operating dangerous machinery.

Usage in Children: Clinical studies establishing safety and effectiveness in children have not been done; therefore, usage is not recommended in the pediatric age group.

Usage in Pregnancy: See "Contraindications."

ADVERSE REACTIONS. Drowsiness, dry mouth and, on rare occasions, blurred vision have been reported.

More detailed professional information available on request.

ROERIG Pfizer
A division of Pfizer Pharmaceuticals
New York, New York 10017

Antivert®/25
(meclizine HCl) 25 mg. Tablets
for vertigo*

ARIZONA MEDICINE TO BE OR NOT TO BE

JOHN W. KENNEDY, M.D.

At the recent Annual Meeting of your House of Delegates far ranging changes and suggestions in the direcion of the policy to be pursued by your Journal were voiced. The Board of Directors is directed to re-evaluate the Journal, its cost, its editorial policies and its future. (Resolution 9-76).

With a rapid fall in income from national advertising, the continued increase in printing costs, and the endless increase in postage, the Board must make some hard decisions.

The (THROWAWAYS), which litter offices, have "sopped up" the drug advertising business. There are a few Loyalists amongst the national drug companies, thumb through your few recent issues and you will soon learn who they are, support them.

The Delegates further directed that certain polls of the membership be taken on some issues and it is hoped that included in this will be a chance for you to indicate some choices about the future of the journal. (Resolution 9-76 and S-76).

Among the comments coming from your Delegates were the following:

Because the membership has such a, wide range of speciality and primary care, dispersion of interest to continue scientific articles which cannot possibly range the entire medical parade, some members would rather see the emphasis on details of the State Legislative actions proposed or passed which relate to medicine, more information malpractice activities, more discussion of controversial problems, and more information helpful in every-day office management.

Just a word about controversial medical politics and such---we probably would have to obtain the services of a lawyer as proof reader, to try and avoid a rash of damage suits. This threat of legal action has almost driven free speech on controversial physicians and their problems underground.

In the meantime we look forward to a flood of "letters to the Editor" voicing your opinions and suggestions. When you identify a problem, and have made a diagnosis, be sure you propose a solution, the proper treatment.

Have a good summer.

Editor's Page

EDITOR-IN-CHIEF
John W Kennedy, M.D.*
ASSOCIATE EDITOR
William B. McGrath, M.D.*
EDITORIAL ASSISTANT
Joan Bruner

EXECUTIVE DIRECTOR AND MANAGING EDITOR
Bruce E. Robinson

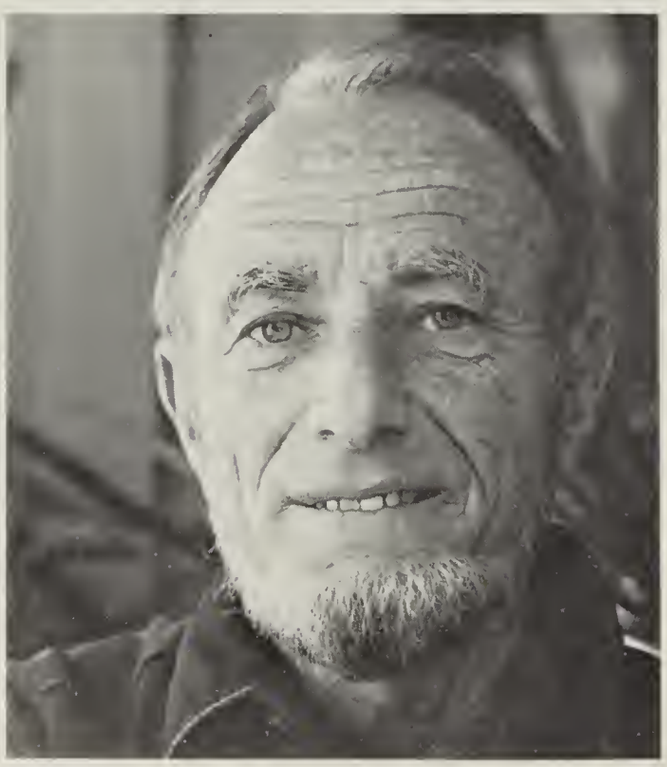
EDITORIAL BOARD

William E. Crisp, M.D.*
Walter V. Edwards, Jr., M.D.*
Warren Gorman, M.D.*
John R Green, M.D.*
John F. Kahle, M.D.*
Gerold Kaplan, M.D.*
George Lastnick, M.D.*
Stanley H. Nordmo, M.D.*
Edward Sattenspiel, M.D.*
Michael L. Schreiber, M.D.*
Murray Spotnitz, M.D.*
Donald J. Ziehm, M.D.*

*Publishing Committee

President's Page

PRESIDENTIAL ADDRESS



EDWARD SATTENSPIEL, M.D.
PRESIDENT 1976-77

Since this is the year of our country's bicentennial, it seems appropriate to review some of the highlights of the history of the founding and beginnings of our organization — The Arizona Medical Association.

It was in the year of 1892 that 15 physicians met in the city of Phoenix in the territory of Arizona to organize the Arizona Medical Association. The census of 1890 lists the population of Arizona as 88,243. The city of Phoenix at that time had less than 4000 people and it was only 3 years before, in 1889, that the capitol had been moved from Prescott to Phoenix. It was a bustling little community with hotels, restaurants and rooming houses and almost a hundred different occupational classifications listed, including most of the professions, carpenters, contractors, building and loan associations, ice factories, booksellers, candy-maker, jeweler, upholsterer, confectioner and many others. It's interesting that it was not until 1893, one year after the founding of the Arizona Medical Association, that trolley cars were electrified in Phoenix and that home mail delivery began. We have outlasted one of those developments and may outlast the other the way things are going at present. The Maricopa County Medical Association had been organized in February of 1892 in Phoenix at the offices of Dr. Henry A. Hughes and Dr. Logan D. Dameron located at 44 South Center Street (now Central Avenue) and it was at a meeting of that society on May 3rd of the same year that it was decided to initiate a territorial organization. Here are the first pages of the original minutes of the Arizona Medical Association.

ORIGIN AND ORGANIZATION OF THE ARIZONA MEDICAL ASSOCIATION

"Early in May, 1892, the following letter was addressed by the Maricopa County Medical

Association to the physicians of Arizona.

Dear Doctor:

At a meeting of the Maricopa County Medical Association held in Phoenix on the first Tuesday in this month, the following preamble and resolution were unanimously adopted:

Whereas, it is evident that there are many earnest and zealous physicians in Arizona who are willing to contribute of their time and talent tards the general interest of the medical profession and, whereas, the greatest good to the profession can be accomplished through organization, therefore, be it resolved, first, that we call a meeting of the physicians of the territory for the purpose of organizing a territorial medical society, and that said meeting be held in Phoenix on May 25th (Wed.) in order that we may elect delegates to the American Medical Association which meets in Detroit, Michigan, June 7, 1892. Resolved, second, that a committee of three be appointed to invite all "regular" physicians residing in the territory to attend said meeting. In compliance with said resolution, you are most cordially invited to be present and participate in the organization of the territorial association. We deem it unnecessary to enumerate the many reasons why we should organize as we take it for granted that they are evident to all thinking physicians.

Yours fraternally,

J. Miller — President

L. D. Dameron — Secretary

W. H. Ward)

H. E. Martin) — Committee

H. A. Hughes)

N.B. Please reply at once, it will be necessary for us to know early whether you intend to be present or not.

Recognizing the call of the Maricopa County Medical Association, the following physicians of Arizona assembled in the parlors of the Commercial Hotel (now Luhrs Hotel) at Phoenix on the afternoon of May 25, 1892. Drs. Gilbert of Mesa City, Mauck of Tempe, Green of Tucson, Brock of Tempe, Hamilton of Tombstone, Sabine of Gila Bend, Ward, Rawlings, Hughes, Kiefer, Dameron, McIntyre, Wharton and Martin of Phoenix. The meeting was called to order by Dr. J. Miller as chairman. A prayer was made by Rev. Dr. Pearson of Phoenix, and an enthusiastic and encouraging address of welcome by Gov. N. O. Murphy. A temporary organization was then formed with Dr. J. Miller as chairman and Dr. H. E. Martin as secretary. After an elegant and carefully prepared address by Dr. Miller upon the objects and future of the Association, committees were appointed as follows: on consitution, Drs. Hughes, Green and Gilbert; on nominations for organization, Drs. Dameron, Hamilton and Ward. After necessary recess, these committees reported, with few corrections the report of the constitutional committee was adopted and they were discharged. The report of the committee on nominations was a follows:

President:	Dr. Hughes & Dr. Miller
1st Vice President:	Dr. Martin
2nd Vice President:	Dr. Gilbert
3rd Vice President:	Dr. Hamilton
Secretary:	Dr. Green
Treasurer:	Dr. Sullivan

An adjournment was then taken until 8:00 P.M. On reassembling at 8:30, Dr. Miller was elected president by ballot and the other nominees, there being no opposition, were elected by acclamation. Adjourned until 10:00 A.M. May 26th. Following this adjournment was a banquet at the Commercial Hotel given by the Maricopa Society to the visiting physicians, the resident physicians and their wives. Many representative physicians of Phoenix were present and a most enjoyable evening was spent. Neither the society nor proprietor of the hotel spared any trouble to entertain the visitors, and the social program of the first meeting of the Arizona Medical Association was certainly a success."

The objects of the Association as stipulated in the new constitution that was adopted at that time were: (1) to bring the regular practitioners of medicine resident in Arizona into close relation with each other and (2) to extend the bounds of medical science, to elevate the profession, to relieve human suffering, and to prevent disease. It is worthy of note that Article VIII, Section I of the original by-laws of ArMA adopted at that time states as follows: "It shall be the duty of the president to deliver at each regular meeting of this Association an address", it is also rather nostalgic to note that Article V states that the fee of admission shall be $5.00 in currency or coin of the United States and the annual dues of each member $2.50 United States currency or coin.

The second and third annual meetings were both held in Phoenix and it is at the third annual meeting that we see the first recorded financial report of the Association which I thought might

be interesting to relate to you.

Total income of dues from members was $95.00. There were expenses of $36.10 for stamps, papers, envelopes, certificate of membership printing, letter heads, seal, etc.: and an expense of $40.00 for printing the transactions of the Association, leaving a net of $18.90 in cash in the Valley Bank.

Papers presented at that meeting included one on the use of instruments in labor by Dr. Engles, a paper on menstruation by Dr. Barry, a paper on aseptic and antiseptic midwifery by Dr. Purman, a paper on the treatment of acute catarrh of the middle ear by Dr. Martin and an annual essay on medical ethics by Dr. Barry.

In the minutes of the fourth annual session held in Phoenix in February of 1895, it is interesting to note the followng, "Mr. T. J. Wolfley, editor of the Republican, being called upon, responded in a hearty manner, saying that he and his paper would be found at all times in accord with the medical profession and was ever willing to do what was in his power for the advancement of the Association and medical science." The fifth annual session of the Arizona Medical Association was the first one to be held outside Phoenix, and convened in Prescott, Arizona at the Prescott Opera House in May of 1896. There were the usual very complimentary welcoming remarks, this time not by the Gov. but by a judge, J. J. Hawkins of that city, and these were followed by the usual business session and presentation of scientific papers. At the 1897 meeting in Phoenix a rather significant amendment to the Constitution was adopted, "Resolved that the words—Gentlemen in the Profession—occuring in Section III of the by-laws be changed to Ladies or Gentlemen." The seventh annual meeting of the Arizona Medical Association convening in May, 1898, was the first meeting to be held in Tucson. The following year in Phoenix the Association in its business session was concerned with dissatisfaction with the laws that had been adopted two years previously establishing a Board of Medical Examiners and with recommendations for changes in the law and the composition of the Board. Also at that same meeting it was voted that the secretary of the Association in the future be exempt from payment of dues, and I'm sure that our present secretary will be interested to learn about this because I was unable to find any notation of repeal of that motion in subsequent minutes. At the meeting in Prescott in 1900, it was necessary to process the new applications and admit them as members in order to have a quorum sufficient to have an official meeting of the Association.

At the meeting in Phoenix in May 1901, Dr. Charles H. Jones, the secretary, gave a report which I believe is worth quoting in its entirety:

"Gentlemen:

Your secretary takes pleasure in reporting progress and that our organization is convalescing. A few words of historical statistics, if permissible, will be both instructive and encouraging to all. Nine years ago our Association was formed with nine members. Today we have 56 members and I hold 28 applications for membership awaiting the action of the Judicial Council, making a total of 84. There are in Ariz. about 200 regular physicians, very many of whom are not practicing at all, others doing some practice in conjunction with mining, farming and stock raising. The number who are practicing medicine exclusively will not far exceed 100 or possibly 110. We have then 75% of all active practitioners in the Association, which I believe is a larger percentage than that of any other state or territory in the Union. Still more have signified their intention of joining and will in the coming year. At the celebration of our 10th annual gathering it is not expecting too much to say that we will have 100 instead of 9 ten years before. This is a grand result when we consider that these men are scattered over more than 200,000 sq. mi. of territory and it would be impossible to convene at a point with 300 mi. of every member. But the spirit is good and the meetings are improving. After one or two more gatherings like the present one, when every member knows that there will really be a good meeting, the attendance will be much greater. our financial condition, also, is better than before. The treasury holds $52.50 and I have collected in the last three days $30.00, making a total on hand of $82.50. There is due from members over $300.00 much of which can be collected by presenting statements. our transactions this year will make a neat volume which we can have printed and bound for about a dollar and twenty five each. I recommend that only such a number be ordered as is necessary to supply members in good standing and to exchange with such other state societies as will send us one in return. It has been our lot to send a pamphlet of transactions to all state associations

and receive one, two or three in return. Now that we are to publish a volume of respectable size and quality, why not have an even exchange or none at all.

s/ Charles H. Jones, Sec."

In 1902, in Tucson, the Association voted to reaffirm its allegiance to the American Medical Association and elected Dr. Ward of Phoenix as delegate. He made the following remarks: "I will say that I have been a member of the Association (AMA) thirty five years and I appreciate the honor that has been conferred upon me in electing me delegate and I will do the best I can do to enhance the interests of Ariz. in that convention and if anythings come up, I will do the best I can for the honor of this Association. I have been a member for a long time and have attended a great many meetings and they have always been of great interest to me. I don't expect any such meeting as the first one I attended. In 1882, the Association met in St. Paul. There were about 3000 there and they were from all sections of the country, from the north and from the south, and I think probably that the meeting had more to do with cementing the good feelings of the American people than any other meeting in the United States. They invested in northern lands and town lots and the reception we met with, I cannot describe. All the members were met by committees and we had tickets on every railroad that went out of St. Paul and all of them availed themselves of the privilege to see the country. There were 600 went to Winnepeg and the city was at our disposal. Senator Mason took the whole medical profession to his residence at Stillwater and gave them lunch and boatrides and entertained them in every way. The meetings have always been of interest to me whenever they have been held and I thank you for the honor conferred on me". A highlight of the Tucson meeting in 1904 was a trip by the members of the Association to St. Mary's Hospital where "Dr. A. W. Morton of San Francisco gave a most pleasing demonstration of the efficacy, safety and certainty of his method of spinal analgesia".

At the Prescott meeting in 1905 there was a lengthy committee report on the necessity for annual eye and ear examinations of school children. This report was adopted and forwarded to the territorial Board of Health.

In 1906 in Tucson, a constitution and by-laws for the Arizona Medical Association was adopted conforming to the rules and regulations of the A.M.A. Quoting from the minutes, "The Constitution and By-laws provide that the county society shall be a unit of the medical association throughout the United States. It is the only practical method of handling and conducting an organization, all parts of which shall work in harmony and without friction. County societies have been organized in conformity to the Constitution and By-laws adopted at Tucson in 1904 in Yavapai, Cochise, Pima and Maricopa Counties. The annual dues from these members have been received and duly transmitted to your Treasurer". Quoting elsewhere from the same minutes, "The nucleus which we now have to build upon means that the business of the Arizona Medical Association will be better conducted and made more effectively by men especially fitted for the work. Much remains to be done. There are a considerable number of the profession who from carelessness or lack of professional interest have not become members of the county societies. Delegates and counselors should devise ways and means for bringing them into the fold in a mutually agreeable way. This is the age of organization and mutual assistance. Those who fail to recognize the importance of fraternal helpfulness will ere long be but trailers in the procession of medical advancement." The report of the secretary at this 1906 meeting stated that "the past year has been most pleasing in its results in that the northern and middle portions of the territory has been practically completely organized. There seems to be a movement in the southern third of the territory for organization and it is hoped that during the next year, the southern portion will be as well organized as the balance of the territory". The secretary also listed the following statistics for county society membership:

Cochise County Medical Society	— 26
Maricopa County Medical Society	— 32
Pima County Medical Society	— 11
Santa Cruz Medical Society	— 5
Yavapai County Medical Society	— 26

The 1907 annual meeting was held in Bisbee and this was the first of two meetings of the Association that were held in that community.

A highlight of the minutes of 1909 session held in Prescott are the remarks of welcome delivered by Mr. Morris Goldwater, who was the uncle of our present senator, and who also was at that time, mayor of Prescott. I would like to quote these typical Goldwater remarks, "Mr. President,

Guests and members of the Arizona Medical Society. If I were a doctor I would be an iconoclast, one of the false ideas I would try to destroy is the belief that the mayor should always make the address of welcome at public gatherings. I know something of medicine; I have a number of receipted bills from both doctors and druggists to prove this statement. I have read a great deal of your wonderful doings in the Sunday supplements and the magazines and it seems to me from what I have lately read that you should have been welcomed by one of your own kind. Say for instance the mayor's medical advisor, the city health officer. Taken singly and professionally I do not like doctors and I think most of our people will agree with me in the dislike, but taken collectively, personally and on behalf of the city of Prescott, I am pleased to welcome you. We are glad to have you with us because we think your gathering here will be a good advertisement to our city. When our brethern of the medical profession read in the medical journals the reports of your doings, we hope that they will look us up and learn of our splendid climate, our ideal situation, our resources and advantages, and be so impressed with our health giving or health restoring facilities that there will be an influx of home and health seekers to this city of the pines. But we are not all together selfish in our welcome. We are glad to have you with us because we know that the motives which prompt you to hold these annual meetings are noble. We believe you are actuated by a desire to benefit and help suffering even while you hope to help yourselves. We welcome you as men who stand high in the esteem of the people among whom they live, and we shall always be glad to have you select Prescott as the city in which to spend your vacations. You are in a land filled with copper, gold and silver, but unfortunately for both you and me, my jurisdiction does not extend over the precious metals. But such as I have I give unto thee. You are welcome to our air, our climate, our pure water. We welcome you to our homes, we welcome your inspection of our streets, our alleys our sewers, yards and unsightly billboards. We welcome and invite your criticism, your counsel and advice. We commit you to the care of your brother practitioners who, being Prescott men, will, we know, care for you properly and we hope that quickened by your stay with us, you may return to your places of labor with increased power to heal the sick, bind up the wounded, comfort the distressed, soothe the afflicted and restore peace to the troubled mind".

His speech was answered by the response of Dr. John Wix Thomas, president of the Maricopa County Society who spoke as follows: "With such attractions as J. L. Sullivan, The Bohemian Girl and other interesting things in Phoenix, I am sure we appreciate the many kind expressions of Mayor Goldwater. We like your city, your sunshine: especially during the summer months. I am sorry that Mayor Goldwater cannot give us some of that gold, silver, and copper. We appreciate the kind offer to visit your homes and other places in Prescott and we shall be glad to welcome the physicians of Prescott and others from the different parts of the territory in Phoenix next year".

During that next meeting in Phoenix in 1910, a paper was read by Attorney Paul Burks of the law department of the Santa Fe Railroad, entitled, "Suggestions regarding testimony of medical experts", and it was described as the most complete and interesting paper covering the subject of medical jurisprudence. The presentation was also described as being followed by a very animated discussion.

The 20th annual session of the Arizona Medical Association was unique in that it was the only annual meeting in the entire history of the Association before or since that time that was held out of the State of Arizona. This meeting was held in the parlors of the Hotel Van Nuys in Los Angeles, California, in June 1911. The reason for holding the meeting at that site became evident in reading the minutes, where it was noted at one point that the annual A.M.A. meeting was to follow immediately upon the conclusion of the Arizona Medical Association meeting. Although the minutes of that meeting are quite lengthy, they initially point out that the roll call by the secretary showed merely 10 members of the House of Delegates were present. Nonetheless, a great deal of business was discussed and of particular interest is the question of A.M.A. membership which is noted in the minutes as follows, "The next question discussed was the advisability of changing the plan of organization so that every member of the county society shall be ipso facto a member of the A.M.A. The secretary explained that this matter had been referred to this Association by a committee of the A.M.A. The president spoke in

favor of such a change. It was moved by Roy Thomas and seconded by Schermann that our delegates to the AMA be instructed to favor such a change in the plan of organizing, providing that the annual dues of the A.M.A. be not more than one dollar per member. The motion was carried". There was a heated discussion about the advisability of the A.M.A. adopting some plan of medical defense, and reference was made to the "modern tendency toward demanding damages on the slightest provocation, especially by foreign laborers". There was a very brisk discussion about the advisability of publishing a state medical journal and it was finally decided that the matter should be investigated and reported back at the next annual meeting. Then under the head of miscellaneous business, a resolution was introduced by Dr. Warner Watkins of Phoenix, "Whereas, the present custom of serving alcoholic liquors at banquets or dinners given to or by medical organizations is injurious to public morals and reflects upon the consistency of the medical profession as disciples of health, be it resolved that the Arizona Medical Association disapproves of this custom and requests its county organizations to discontinue this particular phase of hospitality in their annual entertainment of this Association". The minutes then note that there was quite a "spirited" debate and finally the matter was resolved by a motion which required that the question be submitted to a general referendum of the membership of the Association. Since there is no further mention of this subject in subsequent minutes, I would assume that the matter either never was submitted to the membership or else their alcoholic propensities surpassed their moral judgment. The secretary was highly gratified to report the formation of three new county societies during that year: Gila, Coconino and Mohave, and that active work was now being carried on in those counties. He listed the membership of the Association as consisting of:

Maricopa County	— 41
Cochise County	— 22
Yavapai County	— 19
Pima County	— 15
Gila County	— 12
Coconino County	— 8
Mohave County	— 3

With four members of the Yavapai County Society to be transferred to the Mohave County bringing their membership up to seven.

In 1912 the meeting was again held in Bisbee for the second and last time and it's interesting to read the following in the minutes, "The report from the committee on medical defense was presented by Bacon of Miami who stated that Ira E. Brown of Kelvin had taken the matter up with different insurance cos. and that these cos. were very willing to agree to defend the members of the Association for an annual fee from each member, but that no other state association has such a means of defense. Dr. Bacon then read a letter from Frederick R. Green, Secretary of the Council on Public Health and Legislation of the A.M.A., giving detailed information regarding what other state associations had done and with what success. After some discussion, the final action on the matter was postponed until the next meeting of the House." At the next meeting of the House, the minutes state, "The report of the special committee on medical defense was again brought up for discussion. The opinion of those discussing the question was that the time was not opportune for action on this matter and on motion of Holt of Globe, seconded by Palmer of Mesa, the report was voted laid on the table."

The 1913 meeting was held in Globe, Arizona and I think it would be interesting to list here by title the scientific papers presented at that meeting:

"Traumatic Hysteria"
"An interesting Postmortem Examination"
"Etiology and Pathology of Acute, Anterior Poliomyelitis"
"A History of the Epidemic of Poliomyelitis in Southern Calif. with a resume of the present knowledge of the Disease"
"Constipation"
"The Physiology of the Kidney and Methods of Determining its Functional Efficiency"
"Why a State Laboratory? — What are the Duties"
"Epidemic Cerebrospinal Meningitis"
"Preparation of Nitrogen for Artificial Pneumothorax, A Convenient Method"
"Sarcoma of the Bone and Bone Cysts — DX. and Treatment"
"Artificial Pneumothorax and Pulmonary Tuberculosis"
"Carcinoma of the Cervix"
"The Status of Brain Surgery and Mental Disturbances"
"The Prostate Gland"
"Some American Insects and Arachnids Con-

cerned with the Transmission of Disease"
"Galvanism"
"Subparietal Rupture of the Kidney"

As you can see, a rather broad range of medical subjects was covered in these annual meetings. During the House of Delegates sessions at that meeting, the minutes state that "Dr. Wilkinson discussed the social features of the annual session of the Association and moved that it be the sense of the meeting that the annual banquet be made a social function with the wives and lady visitors present. The motion was seconded by Dr. Hughes, President Bacon gave the idea his approval but mentioned the additional cost of such a banquet and suggested the impropriety of burdening an entertaining society with this additional cost. Dr. Thomas of Maricopa called attention to the fact that the entertaining society, as the matter has been in the past, must furnish entertainment for the visiting ladies and is forced, really, to banquet or otherwise entertain two different bodies, whereas, by combining them in one function it would be less of a burden. The motion was put, the ayes — 8, nos — 6, and the motion was delcared carried." So now we officially have the wives at the annual banquet.

At the 1914 meeting in Tucson, a charter was officially granted to the new Navajo County Society, and it was also reported that the Graham County Society was being organized. The delegate to the A.M.A. reported that Arizona had the highest percentage of members of the A.M.A., according to the number of physicians in the State, in the entire Union, and of those members, the highest percentage of subscribers to the Journal. The subject of medical defense again came up and a doctor from Bisbee favored a $10.00 medical defense fee as an assessment from each member of the Arizona Medical Association. This he considered necessary to establish a suitable fund to conduct any defense which might come up. Some of the other doctors felt that this assessment was too high — one of the delegates stated that many companies make a business of insuring physicians against damage suits. He advised the investigation of "blanket" insurance as being a likely solution to the problem. The President stated that the medical defense committee should be on the look out for jokers in the policies issued by some insurance companies. The companies which realy issue desirable policies should be made known to the doctors. It was moved that the committee on medical defense be instructed to look into the matter of consolidated society insurance and get statements of companies thereon and report at the 1915 meeting.

A medical defense plan was brought back to the 1915 House of Delegates meeting in Prescott, and the committee recommended an assessment of $2.00 on every member. There was a great deal of discussion about the size of the assessment and it was finally resolved by adopting an assessment of $5.00 for the following year and having this fee to be determined annually in the future by the House of Delegates. Among other items considered at that meeting was the establishment of a new committee on cancer, following a motion made by Dr. E. Payne Palmer of Phoenix. This motion, however, was lost in the amendment of Dr. A. H. Williams that the subject of cancer be assigned to the scientific committee, which carried.

With the 1915 meeting, the minutes of the first 24 years of the Arizona Medical Association, laboriously handwritten in a bound ledger, came to a close. In re-reading these minutes so painstakingly set down, one can't help being impressed by the dedication and zeal of the pioneers of our Association in their efforts to achieve the objects that they originally stated in the Constitution: that is, to bring themselves into close relationship with each other and to extend the bounds of medical science, elevate the profession, relieve human suffering and prevent disease. They had to struggle against the ever present apathy of many of their colleagues. They had to struggle with the rather primitive means of transportation present in the territory. When they first organized, they had financial problems which by today's standards may seem miniscule, but to them, I'm sure, were quite major, and yet as a result of their efforts, we are gathered here today at the 85th annual meeting in a metropolitan area of over a million people, in a state of two and a half million people, and what we are today is surely a result of their efforts in the past. For myself, this sort of journey into the past promotes a spirit of rededication towards meeting and solving the problems of today and tomorrow. The society may be larger, the problems may seem more complex, but I believe that the basic integrity and idealism of our profession remains unchanged and that the challenges of the future will be met with as much enthusiasm and success as those of the past.

Obstetrics and Gynecology

WHERE CAN I FIND OUT ABOUT . . . ?

For over ten years the American College of Obstetrics and Gynecology has been publishing Technical Bulletins which are sent to all Fellows of the College. Quoting from the Publications Catalogue of the College: "Technical Bulletins describe methods and techniques of clinical practice that are currently acceptable and used by recognized authorities. "Although directed primarily toward Obstetricians and Gynecologists, many of these publications contain information useful to Family Practitioners, Surgeons, and other specialists. Listed below is a compilation of all the Technical Bulletins that are available. If desired, they may be ordered individually or as a set by writing to: A.C.O.G. Publications Secretary, Suite 2700, One East Wacher Drive, Chicago Illinois, 60601.

DONALD J. ZIEHM, Editor

PUBLISHED ACOG TECHNICAL BULLETINS

Number	Title	Date Published
1.	The OB Gyn and Marriage Counseling	1 65
2.	Gamma Globulin in Cases of Rubella	2 65
3.	Histologic Classification of the Common Epithelial Tumors of the Ovary	4 65
4.	Obstetric Analgesia and Anesthesia—General Principles	3 65 (Replaced by No. 11)
5.	Infant Resuscitation	3 65
6.	Report of the Committee on Drug Safety	11 66
7.	A Guide for Collaboration of Physician, Social Worker, and Lawyer in Helping the Unmarried Mother and Her Child	5 67
8.	Amniocentesis—Indications, Technic, and Complications	6 68
9.	Shock Associated with Septic Abortion	7 68
	Technical Bulletins above are out of Print	
10.	The Intrauterine Device	9 68 (Replaced by No. 40, 6 76)
11.	Obstetric Analgesia and Anesthesia	2 69 (Revised 10 73)
12.	Classification and Staging of Malignant Tumors of the Female Pelvis	5 69 (Replaced by No. 23)
13.	Prenatal Antibody Screening and Use of Rho(D) Immune Globulin (Human)	6 70
14.	Suspected Rape	7 70 (Revised 4 72)
15.	Family Life Education A Checklist for Speakers	9 70
16.	Gonorrhea—Treatment in the Female	2 72 (Replaced by No. 28)

PUBLISHED ACOG TECHNICAL BULLETINS

Number	Title	Date Published
17.	Management of Erythroblastosis	7 72
18.	Bacteroides Infections in Obstetrics and Gynecology	10 72
19.	Antenatal Diagnosis of Congenital Disorders	11 72 (Replaced by No. 38)
20.	Immunization During Pregnancy	3 73
21.	Addictive Drugs and Pregnancy	4 73
22.	Maternal Stilbestrol-Genital Adenocarcinoma—and Follow-Up of Exposed Young Women	5 73
23.	Classification and Staging of Malignant Tumors in the Female Pelvis	8 73
24.	Gynecologic Cancer	8 73
25.	Maternal Phenylketonuria	12 73
26.	A Guide for the Obstetrician-Gynecologist in Counseling Those Seeking to Adopt	1 74
27.	Termination of Second Trimester Pregnancy Using Prostaglandin F^2	4 74
28.	Gonorrhea-Diagnosis and Therapy in The Female	6 74
29.	Frequency With Which a Cervical-Vaginal Cytology Examination Should Be Performed in Gynecologic Practice	2 75
30.	Diagnosis and Treatment of Syphilis	2 75
31.	Treatment Resources for Sexual Dysfunction	2 75
32.	Fetal Heart Rate Monitoring: Guidelines	6 75
33.	The Management of Molar Pregnancy	8 75
34.	Prevention of Tay-Sachs Disease: Carrier Identification and Genetic Counseling	1 76
35.	Current Uses of Rho Immune Globulin And Detection of Antibodies	1 76
36.	Urinary Incontinence in the Female	2 76
37.	Hypertonic Saline Amnio-Infusion for Termination of Second Trimester Pregnancy	2 76
38.	Management of Abnormal Cytology by Colposcopy And Or Conization	5 76
39.	Antenatal Diagnosis of Genetic Disorders	5 76
40.	The Intrauterine Device	6 76 (Replaces No. 10)

Clinical Oncology In Arizona

CURRENT TRENDS IN MALIGNANT MELANOMA

HOWARD B. KLECKNER, M.D.
BRIAN G. M. DURIE, M.D.
PAUL L. SCHNUR, M.D.

Malignant melanoma may originate in the skin, eye, or mucous membranes. When located in the skin, it occurs *de novo* or as a change in a pre-existing nevus. If detected before regional or distant metastases have occurred, lesions which have not extended through the papillary dermis can be cured by aggressive treatment. Unfortunately, many cases of melanoma are discovered at an advanced stage. However, because of increased awareness of potential malignancy, more patients are being seen for biopsy at an early stage.

*Section of Hematology-Oncology, Department of Internal Medicine, University of Arizona College of Medicine, Tucson, Arizona 85724.
†Associate in Surgery, University of Arizona College of Medicine; Plastic Surgery, P.C., Tucson, Arizona 85712.

The incidence of malignant melanoma is 0.1 to 9 per 100,000 per year. Disconcertingly for Arizonans, melanoma mortality rates correlate directly with latitude, with Arizona having a death rate three times that of Quebec.[1] This may reflect important etiological factors for melanoma: exposure to ultraviolet light and lack of protective skin pigmentation. Melanoma is four times more frequent on sunexposed areas of the head and neck compared to the trunk of the body. Melanoma is extremely rare in Negroes.[2]

Mortality rates from melanoma have increased 3% to 9% per year over the past 15 years. Reasons for this are unclear, but could reflect an increased exposure to ultraviolet light because of life style changes.[2]

Fifty to seventy percent of patients with melanoma give a history of a pre-existing nevus at the primary site. Any change in a nevus, including enlargement, discoloration, extension of pigment beyond the border of the nevus, satellite lesions, ulceration, or bleeding

TABLE I

CRITERIA FOR CLARK'S LEVELS

Clark's Level	Histologic Depth of Invasion
I	Epidermis
II	Papillary dermis
III	Interface of papillary and reticular dermis
IV	Reticular dermis
V	Subcutaneous fat

Clark, W.H., Jr., From, L., Bernadino, E.A., and Mihm, M.C.: Cancer Res. 29:705, 1969.

suggests a malignant transformation and biopsy is indicated.

Essential to the proper initial management of melanoma is appropriate staging for extent of disease (for example, *Stage I*—localized disease without metastasis to regional nodes; *Stage II*—regional lymph node metastases [pathologically proved]; *Stage III*—disseminated disease) and careful histologic evaluation of the primary lesion. There is a correlation between depth of invasion by Clark's levels[3] (see Table 1) and the incidence of lymph node metastases. In the UCLA series,[4] the incidence of nodal metastases in patients undergoing elective node dissection at the time of presentation was 16% for level III, 59% for level IV, and 66% for level V. All of the level III and 60% of the level IV patients had clinically *negative* nodes. In another series,[5] level of invasion correlated with disease-free survival after resection of the primary and regional lymph node dissection. The percentages of patients who were disease free at five years were: 100% for level II lesions, 88% for level III lesions, 66% for level IV lesions, and 15% for level V lesions. At each level, the presence of nodal metastases was correlated with a much poorer prognosis. In patients with level IV lesions, for example, the five-year "cure rate" was 82% in patients with pathologically negative nodes and 27% in patients with pathologically positive nodes.

Common sites for metastasis of melanoma are lymph nodes, skin, lung, liver, spleen bone, and the gastrointestinal tract. After careful examination of skin and lymph nodes, an evaluation for distant metastases (especially if suggested by history) should include a chest x-ray, liver function tests, liver-spleen scan, and possibly bone or brain scan. Indium-III-bleomycin scanning has been shown by the group at the University of Arizona Medical Center to be a sensitive means of detecting metastases in melanoma, with less than ten percent false positives and negatives.[6] Evaluation of other organs should proceed as suggested by clinical evaluation.

Tests of immunocompetence, such as skin tests with Varidase, PPD, Cocci, Mumps, and Candida, and if possible KLH, may be of use. Good prognosis seems to be associated with either immunocompetence before treatment or an increase in immunocompetence during treatment.[7]

SURGICAL TREATMENT

The appropriate initial management of suspected melanoma is excisional biopsy of the primary lesion. Further management should be based upon careful evaluation of fixed sections with respect to depth of invasion. If the lesion is melanoma, wide excision of the area should be performed, taking a margin of 4 to 5 cm. Because of the anatomy of the lymphatic drainage, the underlying deep fascia should be included. More limited resection is often acceptable for superficial lesions close to the eye or ear. For Clark's levels I and II lesions, the wide resection alone with skin graft or flap closure is adequate surgical treatment. Although the evidence remains controversial, we feel that additional regional lymph node dissection is of both therapeutic and prognostic value in levels III, IV, and V lesions.[5] If the lesion occurs in the midline, bilateral node dissection should be performed to the nearest drainage area.

In selected cases, palliative resection of metastatic skin, lung, bowel, or brain lesions may be helpful, especially if combined with adjuvant chemoimmunotherapy.

CHEMOTHERAPY

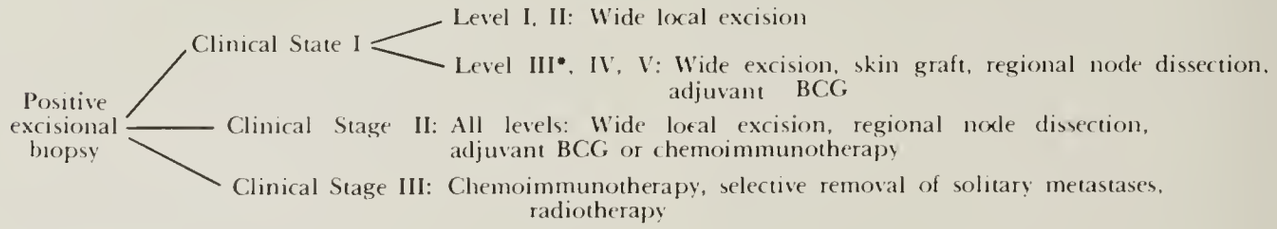
Although alkylating agents do have activity against melanoma, the most effective single agent for metastatic melanoma is DTIC, which is usually given as a five-day infusion with a response rate of 20% to 25%. The addition of hydroxyurea and BCNU to DTIC is abbreviated "BHD". As a combination this regimen has increased the overall response rate to 28%. (If early deaths are excluded, this combination increases the overall response rate to 38%.) In cooperative group studies median survival for this group was 17 months compared to 9 months for DTIC alone.[7] Chemotherapy alone or in combination with immunotherapy is warranted for Stage II or III disease.

IMMUNOTHERAPY

The use of nonspecific immunostimulants such as BCG seems to have a place in a variety of settings of melanoma.[8]

BCG is effective palliative local therapy for cutaneous recurrent lesions. BCG may be injected directly into tumor nodules or given by scarification of the skin surrounding the lesions. Both modes have little, if any, effect on visceral metastases, but in selected cases can cause regression of uninjected nodules.

FIGURE 1
FLOW SHEET FOR RECOMMENDED THERAPY OF MELANOMA



*See text for discussion of level III lesions.

Intralesional injections of BCG may be associated with serious toxicity including high fever, ulceration, disseminated BCG disease, and occasional cases of anaphylaxis. Epilesional scarification appears to be a preferable mode of management with a few toxic side effects.[9]

BCG is of clearest benefit in Stage II disease. Morton and his associates[10] at UCLA have used BCG as adjuvant therapy in patients with regional node metastases which have been resected. At two years the incidence of metastases from the BCG-treated patients was one-half that of a similar untreated control group.

"BCG has been combined with chemotherapy in two settings. Gutterman and associates at the M.D. Anderson Hospital[11] found that when BCG is given in combination with DTIC, metastatic areas regional to BCG immunization showed an increased response to chemotherapy when compared to patients treated with DTIC alone. Chemoimmunotherapy-treated patients with lymph node metastases had remission rates of 55% compared to 18% for patients treated with DTIC alone. Duration of remission (though short) and survival were both significantly prolonged.

In cooperation with the Southwest Oncology Group the University of Arizona has been comparing the effects of various drug combinations on advanced melanoma (and as discussed below, in adjuvant fashion). Most recently we have been studying BHD alone, BHD with BCG, and DTIC with BCG. So far a response rate of 25% has been noted, with complete responses making up 5% to 10% in all three groups. Response rate is much poorer in those patients with liver and brain metastases. Median survival from initition of therapy is 24 weeks. Thus, chemotherapy for advanced melanoma is currently in need of much improvement.

ADJUVANT CHEMOIMMUNOTHERAPY

In view of the poor prognosis for melanoma beyond Clark's level II, the adjuvant use of chemoimmunotherapy with BCG seems to be a reasonable choice in melanoma in an attempt to improve remission duration in those patients with minimal residual disease. The Southwest Oncology Group is presently studying the effect of adjuvant therapy in two classes of melanoma patients: those with localized disease of level III or greater (Class I), and those with regional or distant disease which has been surgically removed (Class II). Class I will receive either no treatment or treatment with BHD for one year. Class II will receive either BHD or BHD with BCG for one year. Since the study has just commenced, it is too early to determine any results. It is hoped that this type of early and aggressive approach may aid in prolonging the disease-free interval and survival in this otherwise deadly disease.

REFERENCES

1. Elwood, J.M., Lee, J.A.H., Walter, S.D., Mo, T., and Green, A.E.S.: Relationship of melanoma and other skin cancer mortality to latitude and ultraviolet radiation in the United States and Canada. Int. J. Epidemiol. 3:325-332, 1974.
2. Elwood, J.M., and Lee, J.A.H.: Recent data on the epidemiology of malignant melanoma. Semin. Oncol. 2:149-154, 1975.
3. Clark, W.H., Jr., From, L., Bernadino, E.A., and Mihm, M.D.: The histogenesis and biologic behavior of primary human malignant melanomas of the skin. Cancer Res. 29:705-727, 1969.
4. Holmes, E.C., Clark, W., Morton, D.L., Eilber, F.R., and Bochow A.J.: Regional lymph node metastases and the level of invasion of primary melanoma. Cancer 37:199-201, 1976.
5. Wanebo, H.J., Woodruff, J., and Fortner, J.G.: Malignant melanoma of the extremities: a clinocopathologic study using levels of invasion (microstage). Cancer 35:666-676, 1975.
6. Lilien, D.L., Jones, S.E., O'Mara, R.E., Salmon, S.E., and Durie, B.G.M.: A clinical evaluation of indium-111 bleomycin as a tumor-imaging agent. Cancer 35:1036-1049, 1975.
7. Costanzi, J.J., Vaitkevicius, V.K., Quagliana, J.M., Hoogstraten, B., Coltman, C.A., Jr., and Delaney, F.C. Combination chemotherapy for disseminated malignant melanoma. Cancer 35:342-346, 1975.
8. Gutterman, J.U., Mavligit, G., Reed, R., Richman, S., McBride, C.E., and Hersh, E.M.: Immunology and immunotherapy of human malignant melanoma: Historic review and perspectives for the future. Semin. Oncol. 2:155-174, 1975.
9. Richman, S.P., Mavligit, G.M., Wolk, R., Gutterman, J.V., and Hersh, E.M.: Epilesional scarification. JAMA 234:1233-1235, 1975.
10. Eilber, F.R., Morton, D.L., Holmes, E.C., Sparks, F.C., and Ramming, K.P.: Adjuvant immunotherapy with BCG in treatment of regional-lymph-node metastases from malignant melanoma. N. Engl. J. Med. 294:237-240, 1976.
11. Gutterman, J.U., Mavligit, G., Gottlieb, J.A., Burgess, M.A., McBride, C.E., Einhorn, L., Freireich, E.J., and Hersh, E.M.: Chemoimmunotherapy of disseminated malignant melanoma with dimethyl triazeno imidazole carboxamide and Bacillus Calmette-Guerin. N. Engl. J. Med. 291:592-597, 1974.

Radiology
Case of the Month

RADIOLOGY CASE NO. 11

JOHN C. BJELLAND, M.D.
TIM. B. HUNTER, M.D.



FIGURE 1
L-POSTERIOR OBLIQUE VIEW OF THE RECTO-SIGMOID COLON. DISREGARD THE FECAL FILLING DEFECTS IN THE PROXIMAL SIGMOID COLON.



FIGURE 2
L-LATERAL VIEW OF THE RECTO-SIGMOID COLON.

A 39 YOF was hospitalized for acute partial intestinal obstruction. The two roentgenographic views above are selected from a barium enema study at that time.

The patient had a long history of intermittant lower back pain and crampy, colicky pain in the lower abdomen, which characteristically followed her menses. She denied any recent weight loss or change in her appetite.

The physical examination was negative except for abdominal findings of a partial bowel obstruction. However, the pelvis and rectal examinations were deferred due to the patient's pain. Proctoscopy revealed normal mucosa but at 18 cm. a constricting recto-sigmoid mass was encountered. The patient's laboratory results were all within normal limits, including a negative stool guaiac exam.

What is the most likely diagnosis?

COLONIC ENDOMETRIOSIS

Endometriosis may be defined as aberrent growth of endometrial tissue outside the uterine cavity. *Internal endometriosis,* or *adenomyosis,* refers to aberrent endometrial growth confined to the myometrium of the uterus, while *external endometriosis* refers to all other such growth occuring in the remainder of the pelvic structures and/or those found rarely in other more remote anatomic areas. Approximately 5% of all females in the reproductive years are affected by this pathological process. Of these patients, it is estimated that as many as 20% have some degree of intestinal involvement (as in this case).

Colonic endometriosis often presents a challenging, difficult diagnostic dilemma to the physician. This is due in part to the fact that the disease often presents in an age group in which neoplasm and inflammation are common and the radiological appearance of the lesion simulates that of colonic adenocarcinoma, or a diverticular abscess. Even at the time of surgery, the surgeon and pathologist may misinterpret the lesion as carcinoma on gross examination.

Clinical findings most commonly consist of intermittant pain in the lower abdomen and pelvis. This pain is secondary to the cyclic growth changes the aberrent endometrium undergoes in response to the normal lunar physiologic fluctuations in female hormone levels. When this tissue bleeds at menstruation, dilatation and distention of the peritoneal sensory pain receptors cause the characteristics intermittent pain which is manifested in these patients as dysmenorrhea. Depending on the severity and the involvement of pelvic structures, the symptoms of rectal tenesmus and even dyspareunia may also be present. When invasion and spread of endometrial implants take place to such an extent that the entire bowel wall becomes involved, varying degrees of bowel obstruction cause characteristic intermittent crampy, colicky abdominal pain to be associated with the menses. The resultant obstructing lesion may be *polypoid* or *constricting* in its radiological appearance.

The complete radiographic differential diagnosis for this lesion is: primary adenocarcinoma, diffusely infiltrative local extension of a pelvic neoplasm, post radiation fibrosis secondary to treatment of a pelvic neoplasm, granulomatous colitis, and a benign infiltrative neoplasm of the pelvis such as endometriosis.

In regard to this case, the radiographic findings pictorially represented on the front page demonstrate a long, concentric, constricting type of mural lesion in the recto-sigmoid colon. Abrupt transition from the normal appearing bowel proximally and distally into the narrowed segment is observed, but there is no evidence of mucosal nodularity or destruction, as is often the case with carcinoma. Since the colon is normal elsewhere and since there is no extra-luminal extravasation of the barium from the constricted segment along the paracolic planes, the diagnosis of diverticulitis is unlikely. Here again in this case, the combination of the clinical history, laboratory values, and radiographic interpretation complement each other in narrowing down the diagnostic choices to the surgically and pathologically proven correct one: colonic endometriosis.

It should be noted that rarely do these masses involve the bowel mucosa. Instead they have a predilection for growth in the cul-de-sac, but may involve the muscarlaris layer of the colon wall primarily with only secondary extension into its mucosal layer. This then accounts for the infrequent incidence of mucosal destruction or rectal bleeding reported with intestinal endometriosis. This may be a helpful diagnostic point in differentiating this lesion from a carcinoma.

REFERENCES

1. "Colonic Endometriosis: Roentgenologic Aspects," Wietersen, F.K., and Balow, R.M., *Radiology,* 1957, 69, 839-846.
2. "Endometriosis of the Sigmoid Colon and Rectum, A Roentgenographic and Pathologic Study," Spjut, H.J., Perkins, D.E., *American Journal of Radiology,* 1959, 82, 1070-1075.
3. *Novack's Textbook of Gynecology,* Novack, E.R., Jones, G.S., and Jones, H.W., Eight Edition, 1972, the Williams and Wilkins Company, Baltimore, Maryland.
4. *Obstetrics and Gynecology,* Wilson, J.R., Beecham, C.T., and Carrington, E.R., Fourth Edition, 1971, the C.V. Mosby Company, St. Louis, Missouri.

Seminars in Endocrinology and Metabolism

BLOOD GLUCOSE IN DIABETES: DOES IT HAVE ANY VALUE?

MARSHALL B. BLOCK, M.D.

Editor

The following editorial is being quoted verbatim from a statement recently presented in the March, 1976 issue of Diabetes which represents the American Diabetes Association's position concerning the relationship between the vascular complications of diabetes mellitus and regulation of blood sugar levels. Because of the importance and controversy of this topic the statement will be presented as it was published with the hope that anyone having dissenting opinions will respond to the editor of this column.

"The following policy statement of the American Diabetes Association is intended to publicize the belief that the weight of evidence, particularly that accumulated in the past five years, strongly supports the concept that the microvascular complications of diabetes are decreased by reduction of blood glucose concentrations."

"For almost 50 years, since insulin therapy was initiated, proponents of 'rigid', 'tight', or 'chemical' control quoted retrospective evidence of decreased or delayed nephropathy and retinopathy as glucose levels are brought by therapy toward the normal range. Opponents to this hypothesis pointed to the problems of complications in many of these supposedly better-controlled patients, to the emotional, to the frequent difficulties with hypoglycemic reactions, and, recently, to the University Group Diabetes Project."

"Five years ago, in a review of 300 reports in the world literature evaluating control, Knowles found data from 85 centers which were satisfactory for analysis. There were no prospective studies which proved or disproved that control prevented complications, and definite studies had yet to be done. He concluded that better means must be developed to achieve control that those presently available."

"The University Group Diabetes Project was initiated to help settle the controversy. The five forms of therapy failed to demonstrate any effect upon microvascular lesions. The middle-aged or older subjects studied exhibited only minimal initial hyperglycemia, however, and the reduction in blood glucose was small, so the results are not directly pertinent to the relationships between glucose levels and microvascular lesions."

"In the past few years, numerous studies in animals, including dogs, rats, monkeys, Chinese hamsters, mice and others, have demonstrated that reduction of hyperglycemia by insulin therapy, by transplantation of insulin-producing tissues, or by other means, prevents or minimizes formation of diabetic-like lesions in eye, kidney, and nerve.[1] Biochemical studies have shown persistent hyperglycemia to be associated with accumulation of sorbitol in nerve, eye, and vascular tissue and with alterations in vascular basement membrane. Most recently, even hemoglobin has been found altered in man and experimental animals in the presence of persistent and prolonged hyperglycemia."

"Biopsies of kidney (and in some studies of muscle) have failed to show abnormalities for the first few years of insulin-dependent diabetes in man, excluding thereby an inedpendently inherited phenomenon. In a small but prospective study of randomly assigned patients just reported from Paris, enthusiastically well-controlled diabetic subjects showed less retinopathy. Thus, the contention that the microvascular complications occur independently of the hyperglycemia and insulin deficiency and that control of the metabolic events is not a factor in their progress does not appear tenable any longer."

Reprint requests to: 3411 North Fifth Avenue, Phoenix, Arizona 85013

These data therefore place the burden of proof upon those who maintain that diabetes control is without effect. The goals of appropriate therapy should thus include a serious effort to achieve levels of blood glucose as close to those in the nondiabetic as feasible. Obviously, patient needs and resources must also be carefully assessed and the goals individualized accordingly. This concept is particularly applicable to the diabetics at greatest risk of developing the microvascular complications—the young and the middle-aged. It is well appreciated, however, that in some juvenile-onset-type subjects, it is most difficult, even with multiple insulin injections, to achieve any significant degree of control of the hyperglycemia. Also, in certain elderly patients, the shorter life expectancy may preclude the need for achieving lower glucose levels, providing they are asymptomatic."

"In summary, current clinical and experimental data clearly demonstrate that optimal regulation of glucose levels should be achieved in the treatment of diabetes, particularly in young and middle-aged individuals, who are at greatest risk of developing the microvascular complications."

"It can be concluded that current means of therapy are only partly effective at best, and therefore a high priority must be assigned to the development of more physiologic insulin delivery systems or to approaches to the correction of the deficient insulin-producing mechanism itself. Finally, good diabetic management necessitates education and training of both patients and health professionals in the technics involved, and close coordination and cooperation in patient management. Most important is a commitment to the view that better 'control,' when achievable, is beneficial."

The above statement by the American Diabetes Association was signed by the current President, Dr. George Cahill, Jr.; Dr. Donnell D. Etzwiler, President-Elect and Dr. Norbert Freinkel, Vice-President of the Professional Section of the American Diabetes Association.

This same statement has subsequently appeared in the editorial section of the *New England Journal* of Medicine. Attesting to its importance.

ERRATUM

In the manuscript entitled "Insulinomas: New Aids in Diagnosis" which appeared in the April 1976 issue of *ARIZONA MEDICINE* the name of John P. Heileman, M.D. was omitted as an author. Our apologies. Also, omitted was acknowledgement to Dr. Arthur Rubenstein, M.D. and his colleagues at the University of Chicago for performing the c-peptide assays.

Seminars in Chest Medicine

RECENT ADVANCES IN DIAGNOSIS AND MANAGEMENT OF LARYNGOTRACHEOBRONCHITIS AND EPIGLOTTITIS

GERALD M. LOUGHLIN, M.D.
LYNN M. TAUSSIG, M.D.

This continuing series of articles entitled "Seminars in Chest medicine" will attempt to keep the reader abreast of developments in the broad field of pulmonary diseases. The format used will be that of brief succinct reviews written by the editors as well as guest contributors. Areas of controversy as well as practical chest medicine will be explored. We hope that these reviews will be of value in promoting continuing education for certification examinations as well as a forum for new and controversial issues. The editors welcome comments and discussion from our readers.

ROBERT J. CLARK, M.D.
LYNN M. TAUSSIG, M.D.
WILLIAM C. WEESE, M.D.

LARYNGOTRACHEOBRONCHITIS

Laryngotracheobronchitis (LTB, croup) is an acute, usually viral infection of the tracheobronchial tree which results in edema, inflammation and narrowing of the sub-glottic region (anatomically the narrowest portion of the upper airway). The net effect of this inflammation is acute upper airway obstruction and inspiratory stridor. LTB usually presents with onset of inspiratory stridor following several days of an upper respiratory tract infection. The peak age of occurrence is between three months and three years. The patient has a hoarse voice, barky cough, moderate temperature elevation, and tachypnea; the signs and symptoms are often

From: Department of Pediatrics and Division of Respiratory Sciences, Arizona Medical Center, Tucson, Arizona.

TABLE I

	LTB	EPIGLOTTITIS
Age Range	3 mos. - 3 years	2 to 6 years
Seasonal Incidence	Fall - Winter	Fall - Winter
Etiology	Viral	Bacterial
Onset	Gradual	Acute
Signs & Symptoms	Hoarse; barky cough; stridor	Drooling; dysphasia; toxic appearance; hoarseness; air hunger
Diagnosis	History; A-P Neck roentgenogram	History; lateral neck roentgenogram
Therapy	Mist; hydration; racemic epinephrine; steroids	Antibiotics; airway
Course	Obstructive signs decrease over 3 to 4 days	Improvement 36 to 40 hrs. with therapy
Pathology	Inflammation of subglottic region, trachea and bronchi	Inflammation of epiglottis and ary-epiglottic folds

worse at night. The course is generally self-limited with signs of obstruction diminishing over three to four days. (Table I.)

In general, LTB can be distinguished from other forms of acute upper airway obstruction by history and physical examination. However, certain radiographic techniques may be helpful in confirming the diagnosis of LTB in ambiguous situations. An *anterior - posterior* view of the upper airway may reveal the characteristic "tower-shaped" narrowing of the sub-glottic region (Fig. 1).[1] In addition, the relatively new technique of xero-radiography provides excellent definition of soft tissue structures in the neck. It can be used to detect non-radiopaque foreign bodies as well as outline the epiglottis and sub-glottic region. Unfortunately, it is expensive, exposes the patient to higher doses of radiation, and is not routinely available in most hospitals.



Figure 1

Anterior-Posterior radiograph of the upper airway demonstrating "tower-shaped" narrowing of the sub-glottic trachea.

Traditional therapy for LTB includes hydration of the tracheobronchial tree via humidified air delivered by vaporizer or mist tent. Large particle mist (not ultrasonic) is preferable. In addition, adequate oral or parenteral fluid is required. Antibiotics are usually of no benefit as the cause is generally a virus (para-influenza 1, 2, 3; respiratory syncytial virus; or adenovirus).

Racemic epinephrine delivered by IPPB has been found to be effective in reducing upper airway obstruction in LTB. Taussig *et al*[2] in a controlled trial of racemic epinephrine therapy demonstrated a dramatic acute improvement in signs and symptoms. However, relapse usually occurred within two hours after a treatment. They administered the drug in doses ranging from 0.25 ml for a patient less than 5 kilograms to 1.5 ml in a patient over 25 kilograms. All dosages were brought to a total volume of 3ml with normal saline and the mixture was delivered over 10 minutes by face mask and IPPB with no greater than 15cm H_2O driving pressure. They observed that the natural history of the disease was not altered but that this form of therapy probably has a role in preventing the need for intubation or tracheotomy. They also felt, in light of the brief duration of the therapeutic effect (often less than two hours), that this form of therapy should not be routinely used for outpatient or emergency room care.

The role of steroids in the management of LTB remains controversial. Numerous studies have demonstrated both therapeutic efficacy or no beneficial effects from steroid therapy. A recent double-blind control study[3] reported improvement in symptoms in certain patients with LTB following the administration of methylprednisolone. The patients who demonstrated benefit from steroid therapy had gradual onset of their symptoms of upper airway obstruction over several days. Those with onset of symptoms within hours of presentation did not benefit from steroid therapy. Thus, the course of the illness may help establish indications for the use of steroids in LTB.

Controversy also surrounds the management of the patient with LTB who requires an artificial airway for progressive airway obstruction. Traditionally, tracheostomy has been the accepted means of bypassing the obstruction. It was felt that it provided a secure airway and avoided placing a foreign body in the area of inflammation. It should be remembered, however, that LTB often involves the entire tracheo-

bronchial tree; thus, tracheostomy tubes are also placed into areas of inflammation. The significant morbidity and mortality associated with tracheotomy has motivated the recent trend towards endotracheal intubation as an alternative way of managing this problem. A comparative review of the uses of both forms of therapy by Schuller and Brick[4] pointed out the safety of this form of therapy. The mortality from intubation and from accidental extubation was zero. The morbidity was extremely low; in particular there did not appear to be any deleterious effect of passing a tube through the area of obstruction and inflammation. Of note is that most patients are intubated prior to tracheotomy, in order to reduce surgical complications. It seems quite reasonable, then, to leave this airway in place rather than perform surgery. The tube appears to have a salutory effect on the disease process, i.e. there is a delay in return of edema and symptoms of upper airway obstruction following accidental removal of the tube. The presence of this "safe" period, not available if a tracheostomy tube comes out prematurely, is an important consideration in hospitals where support may not be immediately available. It affords the physician in charge an opportunity to gather the required assistance for re-intubation if necessary. Schuller and Brick's data support this approach. Table II presents a comparison of their data with large series of cases of LTB and epiglottitis treated with tracheostomy. As can be seen from these statistics, the complication and mortality rates for intubation are both lower than the respective rates for tracheotomy. The conclusion from this experience is that nasotracheal intubation is safer than tracheostomy and is a very effective way of bypassing the upper airway obstruction of LTB.

Table II

COMPARISON OF INTUBATION AND TRACHEOSTOMY IN LTB AND EPIGLOTTITIS

	Intubation (86 cases)	Tracheostomy (724 cases)
Complication Rate (overall)	8.6%	12%
Mortality from Procedure	0	3.6%
Mortality from Accidental Extubation	0	8%
Hospital Stay (average)	3.9 days	6.5 days
Accidental Extubation	Non-emergency situation	Emergency situation

EPIGLOTTITIS

Epiglottitis is an acute, fulminant infection of the epiglottis, aryepiglottic folds and surrounding tissue usually caused by *Hemophilus influenzae,* type B. It is characterized by sudden onset, with a rapid course often progressing to complete respiratory obstruction due to an edematous inflamed epiglottis. It is essential that it be regarded as a medical emergency requiring immediate and definitive therapy to prevent complete obstruction of the glottic opening by the "cherry red" epiglottic mass.[5]

The usual age range of occurrence is slightly older than that for LTB, and is between 2 and 6 years. However, adults with epiglottitis are not uncommon. Many patients are ill for less than eight hours before seeking medical attention. The usual presenting symptoms include high fever, sore throat, dyspnea, drooling, dysphagia and muffled cough. These children are frightened and prefer the sitting position, leaning forward. They breathe with a slow deliberate rate. (Table I.)

As with LTB, the diagnosis of epiglottitis can often be made on history alone. In situations where the diagnosis is not clear, a *lateral* neck radiograph will often reveal the swollen epiglottic shadow. The epiglottis and aryepiglottic folds become so swollen that they fill the hypopharnyx as a diffuse soft-tissue density (Fig. 2).[6] Podgore and Bass[7] refer to the "thumb sign" in describing the appearance of the swollen epiglottis on lateral neck radiographs. This technique, as well as xero-radiography can be invaluable in differentiating among the causes of acute upper airway obstruction. It is important



Figure 2

A lateral neck roentgenogram of a patient with epiglottitis. The diffuse soft tissue density filling the hypopharnyx is pathognomonic of an edematous epiglottis.

to realize the significant risks of acute total airway obstruction in epiglottitis secondary to attempts at direct visualization of the epiglottis. In fact, any upsetting manipulation of the patient may precipitate acute, total airway occlusion. Therefore, any procedure performed on the patient with epiglottitis should be done in a setting where personnel and equipment are immediately available to establish an artificial airway (preferably the operating room or intensive care unit).

The management of the patient with epiglottitis includes use of intravenous antibiotics. Ampicillin in appropriate doses is the first-choice antibiotic. However, in areas where ampicillin-resistant *Hemophilus influenzae* have been identified, chloramphenicol should be added to the initial therapy until sensitivities are available. Racemic epinephrine and steroids have not been demonstrated to be of benefit in this illness. In fact, placing a face mask on an anxious child with epiglottitis who may be in the recumbent position may precipitate airway occlusion.

In contra-distinction to LTB, it is generally felt that, because of the severe risk of sudden total obstruction, all patients require an artificial airway as soon as the diagnosis is made. As with LTB, the type of artificial airway used to treat epiglottitis is under re-evaluation. With appropriate antimicrobial therapy, the usual duration of severe obstruction is only 36 to 48 hours. Thus, a more temporary airway, i.e. an endotracheal tube, may be a more acceptable and appropriate form of therapy. It has a lower complication and mortality risk and does not in itself protract the hospital stay (see Table II). Several recent articles have reported the successful use of endotracheal intubation in managing acute epiglottitis. A report from Battaglia and Lockhart reviews their experience and others with this form of therapy.[8] Their results, in general, agree with the data presented by Schuller and Brick. In light of these experiences, intubation is certainly a safe and effective means of securing an artificial airway in this acute and relatively brief illness (when properly treated).

This brief review has concentrated on LTB and epiglottitis. It is also important to mention certain aspects of other diseases which need to be considered in the differential diagnosis of upper airway obstruction.

A foreign body generally presents with an acute choking or coughing spell; however, this may go unobserved and, following a "silent period," the first sign of a foreign body may be acute stridor and or wheezing. A large fixed obstruction of a main stem bronchus can result in inspiratory stridor. Inspiratory and expiratory films of the chest will show hyper-inflation during expiration on the side of the foreign body with shift of the mediastinum to the uninvolved side; this is due to air trapping. In a young patient right and left lateral decubitus films may yield the same information. With this technique, the side in the down position does not collapse in the normal manner during expiration if a foreign body is present.

A retropharyngeal abscess is a less common cause of acute upper airway obstruction in the antibiotic era. It occurs in children under 3 years, usually following a pharyngitis. It depends on the presence of retro-pharyngeal lymph nodes, which become infected and abscessed. After 3 years of age these nodes tend to disappear, and thus, this illness is quite rare after three years. Appropriate antibiotics and surgical drainage are the treatment of choice.

With failure of immunization programs, laryngeal diphtheria must not be overlooked. The gradual onset of stridor, in an unimmunized child who presents with a sero-sanguinous nasal discharge, should clue the physician to look for the pseudo-membrane on the posterior pharnyx, which is characteristic of diphtheria. Antitoxin and penicillin or erythromycin are indicated in this setting.

CONCLUSION

In conclusion, while the basic approach to diagnosis and management of LTB and epiglottitis remains unchanged, the above advances may well serve to reduce the morbidity and mortality from the illnesses and their treatments.

BIBLIOGRAPHY

1. Grunebaum, M.: Radiologic Features of Acute Laryngitis in Infancy. Israel J. Med. Sci. 8:1728-1732, 1972.
2. Taussig, L.M., Castro, O., Beaudry, P.H., Fox, W., and Bureau, M.: Treatment of Laryngotracheobronchitis (Croup). Amer. J. Dis. Child. 129: 790-793, 1975.
3. Massicote, P., and Tetreault, L.: Evaluation de la Methyl-prednisolone dans le Traitement des Laryngites Aigues de L'Enfant. L'Union Medicale Du Canada 102: 2064-2072, 1973.
4. Schuller, D.E., Brick, H.B.: The Safety of Intubation in Croup and Epiglottitis: An Eight-Year Follow-up. Laryngoscope 85: 33-46, 1975.
5. Berenberg, W., and Kevy, S.: Acute Epiglottitis in Childhood. New Eng. J. Med. 258: 870-874, 1958.
6. Dunbar, J.S.: Upper Respiratory Tract Obstruction in Infants and Children. Amer. J. Roent. 109: 227-246, 1970.
7. Podgore, J.K., Bass, J.W., J. Pediatr. 88: 154-155, 1976.
8. Battaglia, J.D., Lockhart, C.H.: Management of Acute Epiglottitis by Nasotracheal Intubation. Amer. J. Dis. Child. 129: 334-336, 1975.
9. Kendig, E., Disorders of the Respiratory Tract in Children. Philadelphia, W. B. Saunders Co., 1972.

Renal Disease

ANTIBIOTICS AND THE KIDNEY

GEORGE M. NICKAS, M.D.

Determination of renal function is important in antibiotic usage in two areas:

1. To determine modification of dosage in the presence of renal impairment.
2. In recognizing antibiotic induced nephrotoxicity.

This brief review covers the first area, that of dosage modification.

Many antibiotics are excreted by the kidney, some virtually unchanged. With renal impairment, that is, an elevated serum creatinine, or decreased creatinine clearance, antibiotic blood and tissue levels may attain undesirably toxic levels requiring reduced dosage regimens. Bennett, et al, have published a valuable reference "A Guide to Drug Therapy In Renal Failure," JAMA, Dec. 16, 1974, which should be readily available to all physicians. In addition, the drug package insert and Physician's Desk Reference are convenient sources. It should be emphasized, where massive or protracted or potentially toxic antibiotic therapy is anticipated, measurement of kidney function is a valuable guideline. In addition, for those antibiotics also dependent upon hepatic metabolism, for example, carbenicillin, liver function studies are indicated in determining the proper dosage.

The following antibiotics require no dose modification:

1. chloramphenicol, erythromycin, doxycycline and the penicillinase resistant semisynthetic penicillins such as nafcillin and oxacillin with the notable exception of methicillin.

Major antibiotic groups, especially used in the hospital setting requiring dose modification with a creatinine clearance of 50 cc's per minute or less include:

1. Certain penicillins (penicillin-G, ampicillin, methicillin, carbenicillin.
2. Aminoglycosides (kanamycin, gentamicin, tobramycin and streptomycin).
3. Cephalosporins (cephalexin, cephaloridine, cephalothin cefazolin).
4. Tetracyclines (tetracycline and minocylcine).

Clindamycin requires special consideration and will be discussed in more detail.

Use of penicillin-G in massive doses, that is 20 to 30 million units daily for life threatening infections such as enterococcal endocarditis, need progressive reduction with creatinine clearance of 60 cc's per minute or less to avoid neurotoxicity. Penicillin neuro-toxicity is manifested by asterixis, seizures, myoclonus and delirium and can be easily confused with uremic or other metabolic encephalopathies. Dosages of 3 to 4 million units per day with oligoanuric patients provide adequate blood levels. Carbenicillin in massive doses, 20 to 30 grams per day, will similarly produce an encephalopathy as well as metabolic acidosis. As with penicillin-G, progressive reduction in dosage is necessary:

(a). 4 grams daily in divided dose with creatinine clearance of 10 cc's or less, for example, may be adequate for serious life threatening infections. With hepatic as well as serious renal dysfunction, both penicillin-G and carbenicillin must be reduced further to approximately 2 grams per day total to avoid penicillin encephalopathy.

Finally methicillin and ampicillin require reduction in daily dosage with creatinine clearances of 50 ml. per minute or less. Methicillin is also occasionally nephrotoxic producing an acute interstitial nephritis.

Aminoglycoside antibiotics have in common potent ototoxic and nephrotoxic properties; therefore pre-treatment and serial determinations of renal function are important in dose adjustment. Studies on gentamicin provide guidelines for this adjustment. The guidelines currently provided in the Physician's Desk Reference are derived from such studies which demonstrate that the serum creatinine times four approximates the T1/2 (half life) and that administration of the drug every two half lives will give therapeutic and hopefully non-toxic blood levels. This above

From 925 E. McDowell Rd., Phoenix, AZ 85006 (Dr. Nickas).

guideline retains a constant dosage with increased time interval of administration. For example, if the serum creatinine is 3 mg.% in an 80 kilogram individual, 80 mg. given every 24 hours should provide adequate and safe blood levels. An alternative guideline is to retain a constant time interval of administration, for example, every 8 hours with a reduced dosage given at each interval. A nomogram is available for this dosage schedule. Finally, the availability of a radioactive assay for serum gentamicin level determination should further refine accuracy of gentamicin usage.

Tobramycin (Nebcin) the most recently introduced aminoglycoside antibiotic has a similar therapeutic and toxic spectrum as gentamicin. Both agents are excreted by the kidney largely unmetabolized. One suggested guideline for the use of tobramycin is administration of the drug (usually 1 mg. per kg. body weight) at increased intervals depending upon serum creatinine levels. The interval in hours equals six times the serum creatinine level; e.g., at an 80 mg. every 18 hours. The alternative guideline using a fixed time interval of 8 hours with a reduced dosage of less than 1 mg. per kilogram body weight can be readily determined by a nomogram furnished by the drug manufacturer in the package insert.

Cephalopsporin atibiotic are widely used and require reduction with creatinine clearances of below 50 cc's per minute. Adverse and toxic effects include various allergic reactions, positive Coombs' test with or without hemolytic anemia and rarely, but increasingly reported, nephrotoxicity. The route of excretion is primarily renal for this group of drugs. Serum half lives vary considerably: cefazolin , cephaloridine , cephalothin = cephalexin.

In the presence of normal renal function these are usually given every 6 hours; with creatinine clearance of less than 10 cc's per minute, suggested intervals of administration vary from every 12 hours for cephalexin and cephalothin to every 24 to 36 hours for cephaloridine and cefazolin.

The tetracyclines' adverse effects are well recognized, including gastrointestinal intolerance, sensitivity reactions and blood dyscrasis. Adverse renal effects will be discussed subsequently. The anti-anabolic affects of this group manifests itself with increased BUN, metabolic acidosis and usually is seen with pre-existing renal impairment. The serum half life with normal renal function varies; doxycycline, minocylcine, tetracycline. Because of its long half life, doxycycline (Vibramycin) remains the current tetracycline of choice with renal impairment, requires no dose adjustment, while minocylcine and tetracycline should be considerably reduced to avoid the above adverse effects. Frequency of administration with normal renal function varies from every 6 hours with tetracycline to 12 hours with minocylcine, and 24 hours with doxycycline to the following adjustment with severe renal impairment, that is a creatinine clearance of 10 cc's or less per minute:

> q 48 hours for tetracycline, q 24 to 36 hours for minocylcine and q 24 hours for dosycycline.

Finally, mention should be made of clindamycin (Cleocin) which is widely used for treatment of anaerobic bacterial infections. Gastrointestinal complications, including acute fatal enterocolitis, and blood dyscrasis may occur with clindamycin. Normally this agent requires no reduction in dosage, but with severe renal impairment, its half life is doubled. Precaution is advised with severe renal and/or hepatic disease, no clear-cut recommendations as to dose modification are available, although Bennett's review of 1974 calls for no reduction in the presence of severe renal impairment. Monitoring of blood clindamycin levels are advised, but this determination is not generally available presently. Empirically however, it may be advisable to reduce the frequency of administration in the presence of a cratinine clearance of 10 cc's or less per minute, expecially with the appearance of diarrheal symptoms.

In summary, reduced antibiotic dosage may be indicated to avoid numerous toxic effects from the usage. The existence of renal impairment should alert the clinician that modified antibiotic regimens may be necessary in the acre of his patients.

Department of Health Services

BUREAU OF HEALTH EDUCATION



SUZANNE DANDOY, M.D.
DIRECTOR

The Department's Bureau of Health Education recently completed a series of three unique health workshops for 40 teachers of adult basic education programs around the state. The workshops were a cooperative effort between this Department and the Department of Education's Adult Basic Education Division.

The workshops presented teaching plans and methods designed to enable each health topic to be incorporated into the three subjects taught in adult basic education programs: English, Mathematics and Social Studies.

Health professionals presented the core material at the workshops, while the educators designed the model and presented the education techniques and evaluation devices. Topics presented concerned Birth Control, Family Relationships, Nutrition and Mental Health.

Birth Control was presented within the context of human sexuality. Methods of birth control were taught together with the premise that every child born should be a wanted child, thus contributing to rewarding relationships within the family.

Family Relationships were described using a parent/child/sibling model, with child care and development being the crucial axis for health growth. Immunization schedules were also presented.

Nutrition was dealt with in terms of the nutritional needs of the family, extending the first two presentations into the realm of the total health of the individual. Obesity, a common health problem, was viewed in terms of abusing the body, and as a result in some persons of unfulfilled emotional needs.

The Mental Health portion recapped environmental influences as they contribute to mental illness, e.g., experiences with the family, the school and the job which create situations that in turn create tensions.

Student questionnaires, obtained both during and following the workshops, indicated the program was quite effective and the material presented was being used in the classrooms.

Plans to offer the workshops in 1976/77 are already underway, and the needs assessment has been designed to determine other health topics of concern to students in adult basic education programs. Expert volunteers are needed to staff this kind of endeavor, in order for the Bureau to present similar additional programs statewide. For instance, on upcoming series already sched- for May through August this year, will be for the nurses, educators and counselors on the Navajo Reservation. A Training Development Workshop for allied health personnel is also scheduled for the Navajo Reservation.

Professionals willing to donate their expertise in these areas are asked to contact the Bureau of Health Education, Arizona Department of Health Services, 1740 West Adam, Phoenix, Arizona 85007, telephone (602) 271-5364.



POSTGRADUATE EDUCATION

C HERBERT FREDELL, M.D.

In view of the incredible annual expense of postgraduate educational courses and national conventions and conferences a cost conscious public may someday ask for the evidence that these meetings are defensible business expense with some measureable value. Since these expenses are eventually charged to the patient a persistent question arises concerning what the attendance at meetings or exposure to other types of prepared materials have to do with the quality of care that is provided.

Recertification, periodic re-examination for licensure, and peer review of outcome studies of practice have become common issues before specialty boards, legislatures, hospital boards, insurance carriers and even medical societies. The simplistic solution to this situation seems to be more postgraduate education. It is not that easily resolved.

When the cost of continuing education programs are tabulated it seems incredible that there is so little concrete evidence of their value. Considerable research has been done on efficient learning experiences in adults. The typical continuing education program is a relatively inefficient learning experience giving rise to very little change in the behavior of its passive audience.

Efficient learning takes place in response to a specific perceived need and not in anticipation of a need. It requires an active involvement of the learner. The learner must have an opportunity to practice what he learns and he will then learn the skills that he practices. Without early application of new knowledge to real problems in the natural setting, very little will be retained.

Society has enunciated a need for quality assuran and the medical profession has had a long-felt need to upgrade itself with the best insights into the learning process. Can these be reconciled?

The learning we should strive for should not be an episodic escape from our daily professional activities but should be an integral part of it. It should be oriented to real problems and be carried out in the setting in which these problems need to be solved, using the tools and resources that are part of that environment.

One national effort on the part of the American College of Surgeons is the SESAP program. It is a substantial evolutionary effort to a sensible and practical approach to continuing education in contrast to the most popular alternative of dozing through esoteric lectures in darkened halls many miles from home, once or twice a year, and suffering from the dangerous illusion that anything of value is learned in the process.

The efforts on the state level seem to be sporatic, abortive, and clumsy in some areas while there are notable exceptions in others. This essay is not intended to denigrate the long laborious efforts of those involved in medical organizations and medical institutions who contribute to the ever present need for postgraduate education for the practicing physician. This is indeed an incisive challenge to medical educators of our state either to designated or the self appointed. And to those educators at the county and community level it would seem that the hour of opportunity is upon us.

Report on the Housestaff Section

The Housestaff Section of ArMA had the opportunity to participate in the recent ArMA meeting held at the Safari Hotel. This marks the first occasion that we, as housestaff, have had voting rights in the House of Delegates.

As a relative newcomer to organized medicine, I found the process through which we proceeded, at least in part, to determine our fate, to be very democratic and fascinating. Not only was I fortunate enough to be the delegate from the housestaff, but I also found myself as a full member of the Reference Committee on Resolutions.

Although I am a novice, the other members of the committee were patient and extremely fair. Each resolution, including the housestaff resolutins, was considered carefully and thoughtfully, and an honest attempt was made to incorporate the concerns voiced at the time the testimony was heard.

After this experience, I can't help but be more optimistic about the influence each of us as individuals can have on the direction and form of our practice of medicine. Admittedly, it had occurred to me that it was futile and frustrating to fight against the determined attacks by the federal and state bureaucracies. However, I'm convinced that if each individual will take the time, effeort and resources to participate in this democratic process and thus make our legislative leaders aware of our opinions, maybe we won't be forced into a more militant posture that could hurt both our patients and ourselves.

As emerging physicians, soon to join the "real-doctor" community, we appreciate the opportunity to participate with you at the state level, and will try hard to contribute in a meaningful way to the medical political process.

H.G. Butler, M.D.
Past Delegate and Chairman,
Arizona Medical Association Housestaff Section

In Memoriam



ONIE O. WILLIAMS, M.D.
1901-1976

A native of Selmer, Tennessee, he was born January 28, 1901 son of Joseph Jerome and Mary Agnes (Crawford) Williams. Her father was a merchant and farmer and participated in the Civil War. After attending local public schools and graduating from Selmer high school in 1918, he entered Union University at Jackson, Tennessee and there received a B.S. Degree in 1924. He studied at Vanderbilt University Medical School and in 1927 took his degree as Doctor of Medicine. he interned at Grasslands Hospital Valhalla, New York 1927-1928, and in the latter year joined the staff at Western State Hospital at

Bolivar Tennessee. He remained until 1930 and thereafter until 1933 was staff physician at the United States Veterans Hospital. At the University of California, he was a resident in pathology 1933-36.

In 1936 he entered the field of medical education joining the faculty of the University of Oklahoma Medical School as assistant professor of pathology. In 1939 when he accepted the position as director of the laboratory at St. Joseph's Hospital, Phoenix.

Dr. Williams was absent during World War II years 1942-1945 serving in the United States Army Medical Corps in which he held a commission as Major.

At Sheffield, Alabama on June 6, 1927 Dr. Onie Owen Williams married Frances REbecca Rees daughter of John Elliot and Annie Humphrey (Sheehan) Rees. They make their home in Phoenix, and are the parents of two children, Jane Williams, Phoenix and James Owen Williams, Valdosta, Georgia.

Dr. Onie Williams was personification of the complete physician; modest and self-effasing, but in a quiet manner made plain his opinions and directions, courteous and devoted to the service of his specialty, his fellow physicians and their patients. Each decade produces a few, sometimes too few, dedicated, honorable physicians.

Doctor William's varied interests included:

Cancer Society - Medical Advisory Board 1945-1950.

Blood Bank 1946-1953

Member of Phoenix Clinical Club until retirement.

Started school for medical technicians.

First in Arizona to introduce the Papinocolau test.

Member of the following organizations:

- American Medical Association
- Arizona Medical Association
- Maricopa County Medical Society
- Fellow American College of Physicians
- Emertius Fellow - American College of Pathologists
- American Society of Clinical Pathologists
- American Society of Pathologists and Bacteriologists
- Life member Society of Cytology - 1970
- St. Joseph's Hospital, Chairman, Pathology Department

Crippled Children's Hospital.

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM

THE ARIZONA MEDICAL ASSOCIATION, INC.

FINANCE COMMITTEE

The meeting of the Finance Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, AZ, on Sunday, March 6, 1976, convened at 10:10 A.M., Richard L. Dexter, M.D., Treasurer and Chairman presiding.

1975 AUDIT

Mr. Sherald Griffin, CPA, Henry & Horne, reviewed in detail the recently completed certified audit for the calendar year 1975.

IT WAS MOVED AND CARRIED TO APPROVE THE AUDIT AS PRESENTED.

Copies of the audit are available to any member, upon request, at the Association's headquarters.

1977 BUDGET

Mr. Robinson presented a proposed budget for 1977. Extensive discussion and numerous changes were made in the suggested budget.

IT WAS MOVED AND CARRIED TO ADOPT AND RECOMMEND TO THE BOARD OF DIRECTORS THE FOLLOWING BUDGET FOR 1977.

CONDENSED STATEMENT OF ALL OPERATIONS

GENERAL DEPARTMENT	
Revenue	$605,722.00
Expenditures	440,025.00
	$165,697.00
COMMITTEE DEPARTMENT	
Revenue	35,000.00
Expenditures	79,300.00
	(44,300.00)
ANNUAL MEETING	
Revenue	54,000.00
Expenditures	54,000.00
	—0—
PUBLISHING DEPARTMENT	
Revenue	71,760.00
Expenditures	72,935.00
	(1,175.00)
BUILDING OPERATIONS	
Revenue	50,950.00
Expenditures	47,600.00
	3,350.00

BENEVOLENT & LOAN OPERATIONS	
Revenue	4,500.00
Expenditures	4,000.00
	500.00
TOTAL ALL OPERATIONS	
Revenue	$821,932.00
Expenditures	697,860.00
	$124,072.00

GENERAL DEPARTMENT

REVENUE		
401	AMA Commissions	$ 5,857.00
403	Dues — Active Members	538,890.00
404	Dues — Interns & Residents	525.00
406	Dues — Service Members	850.00
421	Sale of Supplies	600.00
429	Other	7,000.00
420	Printing Dept. Income	52,000.00
	Total Revenue	$605,722.00
EXPENDITURES		
501	Auditing	4,500.00
504	Dues, subscriptions, cont.	2,200.00
505	Equipment maintenance & repair	14,000.00
507	General O H (recovery)	(2,800.00)
508	Insurance, general	30,000.00
509	Insurance, health	9,000.00
510	Legal	10,000.00
511	Meeting	19,000.00
512	Miscellaneous	1,000.00
513	Payroll taxes	17,625.00
514	Postage	17,000.00
515	Printing	5,000.00
516	Refunds — AMA Commissions	10,000.00
518	Salaries	210,000.00
519	Supplies	12,000.00
520	Telephone	12,000.00
521	Travel	12,500.00
522	President's Expense	5,000.00
530	Printing Dept. Expense	52,000.00
	Total Expenditures	$440,025.00
		$165,697.00

COMMITTEE DEPARTMENT

REVENUE		
431	Service Contract	$35,000.00
	Total Revenue	$35,000.00
EXPENDITURES		
500A	Articles of Inc. & Bylaws	—0—
500C	Data Coll. & Analysis	—0—
500D	Board of Directors	2,000.00
500E	Executive	1,800.00
500F	Finance	—0—
500H	Grievance	100.00
500I	History & Obituaries	—0—
500J	Maternal & Child Health	3,000.00
500K	Health Manpower	2,500.00
500L	Legislative	9,200.00
500M	Medical Education	5,000.00
500N	Medical Economics	3,000.00
500O	Occupational Health	—0—
500Q	Professional	1,600.00
500R	Public Relations	26,000.00
500S	Governmental Services	1,000.00
500U	Ad Hoc Intern/Resident	2,500.00
500W	Woman's Auxiliary	1,200.00
500X	Physicians Rehab.	400.00
500Y	Prof. Liab. Review	20,000.00
500Z	Malpractice Crisis Committee	—0—
	Total Expenditures	$79,300.00
		(44,300.00)

ANNUAL MEETING

REVENUE		
441	Exhibit Booth Rental	$ 14,100.00
442	Guest speaker sponsors	2,000.00
443	Steak fry	6,200.00
444	President's banquet	4,000.00
445	Breakfast Panel — 1	750.00
446	Breakfast Panel — 2	750.00
447	Registration fees	18,200.00
448	Blue Shield share of expense	8,000.00
449	Other	—0—
	Total Revenue	54,000.00
EXPENDITURES		
541	Exhibit booths	3,000.00
542	Guest speakers	6,500.00
543	Steak fry	11,200.00
544	President's banquet	10,700.00
545	Breakfast Panel — 1	650.00
546	Breakfast Panel — 2	650.00
547	Audio-visual equipment	2,600.00
548	Delegate's manual	1,900.00
549	Employee hotel	2,400.00
550	Gratuities	250.00
551	Miscellaneous	2,200.00
552	Newcomer Program	80.00
553	Nominating Committee	100.00
554	Postage	400.00
555	Printing	3,500.00
556	Promotion	3,600.00
557	Public Relations	1,500.00
558	Scientific Assembly Committee	650.00
559	Supplies	1,600.00
560	Travel	100.00
561	Telephone	420.00
	Total Expenditures	54,000.00
		$ —0—

PUBLISHING DEPARTMENT

REVENUE		
461	Advertising	$20,000.00
462	Reprints	1,000.00
463	Subscriptions, member	49,360.00
464	Subscriptions, nonmember	1,400.00
465	Other	—0—
	Total Revenue	71,760.00

EXPENDITURES		
504	Dues and subscriptions	120.00
505	Equipment maintenance	15.00
506	General overhead	4,400.00
508	Insurance, general	400.00
509	Insurance, health	300.00
511	Meeting	—0—
512	Miscellaneous	—0—
513	Payroll taxes	650.00
514	Postage	2,000.00
515	Printing	54,000.00
518	Salaries	10,450.00
519	Supplies	—0—
521	Travel	600.00
	Total Expenditures	72,935.00
		(1,175.00)

BUILDING OPERATIONS

REVENUE		
471-3	B/F Assessments	$30,000.00
474	BOMEX Rental	13,950.00
475	ARPP Rental	7,000.00
	Total Revenue	50,950.00
EXPENDITURES		
571	Depreciation expense	12,000.00
572	Repair & maintenance	8,000.00
574	Building supplies	2,500.00
575	Interest expense	500.00
576	Property taxes	10,000.00
577	Utilities	15,000.00
578	Insurance	2,000.00
579	Building O H (recovery)	(2,400.00)
	Total Expenditures	47,600.00
		3,350.00

BENEVOLENT AND LOAN OPERATIONS

REVENUE		
481	Interest Income	$4,500.00
EXPENDITURES		
504	Scholarships awarded	$4,000.00
		500.00

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT THE FOLLOWING RESOLUTION BE SUBMITTED TO THE HOUSE OF DELEGATES.

WHEREAS, It is customary for the House of Delegates to approve the Budget of Income and Expenditures for the next succeeding calendar year of the Arizona Medical Association, Inc.; therefore be it

	INCOME	EXPENDITURES	CONTINGENCY
General Operations	$605,722.00	$440,025.00	$165,697.00
Committee Operations	35,000.00	79,300.00	(44,300.00)
Annual Meeting	54,000.00	54,000.00	—0—
Publishing Operations	71,760.00	72,935.00	(1,175.00)
Building Operations	50,950.00	47,600.00	3,350.00
Benevolent & Loan Oprs.	4,500.00	4,000.00	500.00
TOTAL	$821,932.00	$697,860.00	$124,072.00

; and be it further

RESOLVED, That the following Budget of Income and Expenditures for the calendar year 1977 be adopted:

RESOLVED, That the annual dues of the Arizona Medical Association, Inc. be $250 for Active members, with $230 going to General Operations Budget and $20 going to the Publishing Operations Budget; and be it further

RESOLVED, That the Service member dues be $62.50 with $42.50 going to the General Operations Budget and $20 going to the Publishing Operations Budget; and be it further

RESOLVED, That the intern or Resident Active member dues be $25, with $5 going to the General Operations Budget and $20 going to the Publishing Operations Budget.

IT WAS ALSO DETERMINED TO SUBMIT THE FOLLOWING CASH FLOW RECONCILIATION TO THE HOUSE OF DELEGATES

RECONCILIATION OF 1977 BUDGET TO CASH FLOW PROJECTION

The purpose of this reconciliation is to reconcile the 1977 Budget as approved by the Finance Committee to the Cash Flow Projection cash balance at the end of the year.

Income from All Operations per 1977 Budget		$124,072
ADD:		
Depreciation not requiring a cash outlay	$12,000	
Proceeds from borrowing	85,000	97,000
DEDUCT:		
Payments per Retirement Agreement	6,000	
Repayment of prior year's borrowing	85,000	
Acquisition of fixed assets	5,000	(96,000)
Projected cash balance (overdraft), December 31, 1976		(127,005)
Projected cash balance (overdraft), December 31, 1977		$ (1,933)

Meeting adjourned 12:52 p.m.

William E. Crisp, M.D.
Secretary
by

Bruce E. Robinson
Executive Director



William C. Scott, M.D., Past President adresses the House of Delegates



Edward Sattenspiel, M.D., President, Presidential address 1976



Edward Sattenspiel, M.D., P

ANNUAL MEETING HIGHLIGHTS



Presenting the Colors, Honor Guard and the Air Force Band of the Southwest



William C. Scott, M.D. receives



L to R: Drs. Max Parrott, AMA President; Price; Henderson; Scott; Sattenspiel; Kahle; Crisp; Dexter; and Payne.



Kahle, M.D., Vice President



t placque from Dr. Sattenspiel.



Doug Outcalt, Medical Student, U. of A.



Mrs. Erle Wilkinson, President AMA Auxiliary



Max H. Parrott, M.D., President American Medical Association.



Daniel T. Cloud, M.D., AMA Trustee



Mrs. Howard Kimball, Mrs. Melvin W. Phillips, and Dr. Price



Dr. William G. Payne in discussion with Dr. and Mrs. Dexter



Mrs. Howard Kimball, Past President ArMA A



Dr. Sattenspiel presents Dr. Dale F. Webb, M.D. with the A. H. Robins Community Service Award.



Neal Vanselow, M.D., Dean, College of Medicine receives AM ERF contribution from Mrs. Earl Gilbert, ArMA Auxiliary.



George Hoffmann, President ArMA Auxiliary.



Arthur R. Nelson, M.D., Chairman, Resolutions Reference Committee.



Donald F. Schaller, M.D. and Bruce E. Robinson, Executive Dir. ArMA.



RESIDENT'S LUNCHEON: L to R: Harold W. Kohl, Sr., M.D.; H. E. Thompson, M.D.; . Craig, M.D.; Arnold H. Dysterheft, M.D. Back row: L to R: Clarence Yount, M.D., Oscar W. M.D.; James O'Hare, M.D.; and Dermont W. Melick, M.D.



of the Scientific Exhibits—Biofeedback Demonstration, Drs. McKenzie, and Barnes.



Robert L. Price, M.D., Speaker of the House

THE ARIZONA MEDICAL ASSOCIATION, INC. RESUME of the HOUSE OF DELEGATES 1976 ANNUAL MEETING MAY 1, 1976

Adjourned meeting of the House of Delegates of the Arizona Medical Association, Inc. held in the Convention Center of the Safari Hotel, Scottsdale, Arizona, Saturday May 1, 1976 convened at 8:09 a.m., Robert A. Price, M.D., Speaker of the House, presiding.

Credentials

The Credentials Committee reported a quorum present and the House duly constituted.

Roll Call

On the roll call 118 Delegates (and or Alternates) and 21 members of the Board of Directors were present.

Minutes

Minutes of the meeting of the House of Delegates held April 26, 1975 were approved without reading.

Election of Officers

The following officers were elected for a term of one year.

President-Elect	John F. Kahle, M.D.
Vice President	Richard L. Dexter, M.D.
Secretary	William E. Crisp, M.D.
Treasurer	John T. Clymer, M.D.
Speaker of the House	Robert A. Price, M.D.
Editor-In-Chief	John W. Kennedy, M.D.

The following were elected for the term January 1, 1977 to December 31, 1978

Delegate to AMA	Arthur V. Dudley, M.D.
Alternate Delegate to AMA	William C. Scott, M.D.

Election of District Directors

The following District Directors were elected.

Central District Director	Reginald J. M. Zeluff, M.D. (1976-1979)
Central District Director	Wilfred M. Potter, M.D. (1976-1979)
Northwestern District Director	Albert Rosenblatt, M.D. (1976-1979)
Southern District Director	Robert P. Purpura, M.D. (1976-1979)
Southwestern District Director	James F. Martin, M.D. (1976-1977)

Reference Committee on Resolutions

Report of the Reference Committee on Resolutions as deleted, amended or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

Resolution 1-76

Subject: 1976 ARIZONA MEDICAL SERVICES TERMINOLOGY AND DESCRIPTIVE INDEX

WHEREAS, The Occupational Health Committee and the Medical Economics Committee are charged with representing the Arizona Medical Association on all questions relating to Workmen's Compensation (Chapter VII, Section L, page 25), and

WHEREAS, The need is recognized for an appropriate descriptor code mechinism in health care statistical analysis and

WHEREAS, The descriptor code as presented by the Arizona Medical Association Board of Directors entitled "1976 Arizona Medical Services Terminology and Descriptive Index" may be a redundancy, and

WHEREAS, Modification and descriptor standardization require the input of all segments of health care providers; therefore be it

RESOLVED, That the Arizona Medical Association Board of Directors appoint a special study committee to include representation from each of the specialty groups within the State of Arizona to receive such input, and prepare appropriate guidelines for distribution to its membership and other interested parties.

SUBSTITUTE RESOLUTION ADOPTED, AS AMENDED, MAY 1, 1976

Resolution 2-76

Subject: MEDICAL STAFF PRIVILEGES AND PROFESSIONAL LIABILITY

WHEREAS, In 1965 the Committee on Medical Facilities of The American Medical Association submitted to the Council on Medical Sevice the following statement:

"Doctors should be encouraged to carry professional liability insurance that is adequate. However, this encouragement toward self-protection should come from local medical societies and not as a result of coercion on the part of a hospital. There are legal as well as professional reasons why the evaluation of a physician's qualifications for staff privileges should not, in effect, be delegated to an insurance company."; and

WHEREAS, The Council on Medical Services was in accord with the statement and transmitted it to the American Hospital Association; and

WHEREAS, It is implicit in the resolution that the highest standards of medical practice prevail when medical staff privileges are limited or denied only for reasons related to professional competence or ethical judgment; and

WHEREAS, There is no relationship between the quality of care and the requirement of professional liability insurance by Medical Staff members; and

WHEREAS, The Arizona Licensing Act for medical doctors makes no mention of professional liability insurance as a requirement, but rather stresses professional qualifications and adherence to high standards of ethics; and

WHEREAS, The cost of professional liability insurance may become so high that a mandatory requirement of such coverage may constitute interference with the affordable practice of medicine; and

WHEREAS, It is common knowledge that a physician or surgeon who is not permitted to practice his profession in a hospital is as a practical matter denied the right to fully practice his profession (Wyatt vs. Tahoe Forest Hospital District, 174 C-A, 2d 709.715 1959); and

WHEREAS, If financial means is to become a criterion overriding traditional tests of competence, skill and worthiness, then medicine, particularly as it is practiced in hospitals, will fall prey to other financial and non-medical intrusions and limitations; therefore be it

RESOLVED, That the Arizona Medical Association go on record as supporting the 1965 statement of the Council on Medical Service of the American Medical Association.

SUBSTITUTE RESOLUTION ADOPTED, MAY 1, 1976

Resolution 3-76

Subject: AMERICAN MEDICAL ASSOCIATION SUPPORT OF NATIONAL HEALTH INSURANCE

WHEREAS, No system of national health insurance has proven to be superior to the free market system under which American citizens have traditionally sought and obtained medical care; and

WHEREAS, The assumption that national health insurance will evitably be imposed upon us in the United States is a serious mistake; and

WHEREAS, The American Medical Association currently supports a bill, introduced into the American Congress, which if enacted would establish a system of national health insurance; therefore be it

RESOLVED, That the Arizona Medical Association convey in writing to the American Medical Association its belief that the AMA should withdraw its support for the proposed plan, H.R. 6222, of national health insurance.

NOT ADOPTED MAY 1, 1976

Resolution 4-76

Subject: SPECIAL ASSESSMENT LEVIED UPON MEMBERS OF THE ARIZONA MEDICAL ASSOCIATION

WHEREAS, A special assessment in the amount of $100.00 was levied upon all members of ArMA in 1975 in order to finance the activities of a special committee; and

WHEREAS, The establishment of this committee and the levying of the assessment met an unfavorable reaction among many ArMA members; therefore be it

RESOLVED, That in order to obviate misunderstandings or unpleasant surprises or ill feelings among ArMA members no special assessment in an amount exceeding fifty dollars shall be levied upon the members of ArMA unless an explanation and justification of the assessment shall have been made to all members of ArMA at least ninety days prior to the meeting of the House of Delegates in which such assessment is to be considered.

NOT ADOPTED MAY 1, 1976

Resolution 5-76

Subject: MANDATORY MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION

WHEREAS, At the 1975 meeting of the House of Delegates of the Arizona Medical Association there was introduced a resolution calling for a change in the bylaws of ArMA to permit its members to decide for themselves whether they would be members of the American Medical Association; and

WHEREAS, Mandatory AMA membership may not be unanimously favored by the members of the Arizona Medical Association and may in fact actually be favored by a minority of the members of ArMA; therefore be it

RESOLVED, That the Arizona Medical Association conduct a poll of all licensed physicians practicing in Arizona to determine the wishes of all physicians with regard to mandatory versus optional membership in the American Medical Association; and be it further

RESOLVED, That this poll be conducted as soon as possible and that the results of this poll be referred to the Board of Directors at its September 18, 1976 meeting for appropriate action.

SUBSTITUTE RESOLUTION ADOPTED, AS AMENDED, MAY 1, 1976

Resolution 6-76

Subject: ESTABLISHMENT OF A MEDICAL INJURY COMMISSION

WHEREAS, The current means available for a person who claims to have suffered injury as a result of medical care to obtain redress for such injury involve only resotring to litigation; and

WHEREAS, Such litigation places patients and health care providers in an adversary relationship; and

WHEREAS, An alternative means of handling claims against health care providers, namely, the establishment of a commission to evaluate such claims and to compensate claimants whenever appropriate without litigation has been favorably mentioned in a publication of the American Medical Association; and

WHEREAS, The Arizona Hospital Association has also made a public statement in favor of the establishment of such a commission; therefore be it

RESOLVED, That the Arizona Medical Association go on record as favoring the establishment of a medical njury commission managed by the government of the State of Arizona.

REFERRED TO AD HOC MALPRACTICE INSURANCE CRISIS COMMITTEE, MAY 1, 1976

Resolution 7-76

Subject: PROTECTION OF PHYSICIANS FROM BAD LITERATURE

WHEREAS, Our medical profession is currently subjected to a veritable flood of scientific and other literature pertaining to medicine, most of which is not worth reading; and

WHEREAS, This flood of unnecessary literature makes demands upon the postal system of the United States and consumes time of physicians (which time could be spent upon more worthy pursuits such as patient care, shining shoes, and transcendental meditation; therefore be it

RESOLVED, That the Arizona Medical Association send ten dollars to each major publisher of medical literature for the purchase of wastebaskets into which bad manuscripts could be dumped for recycling into useful forms of paper products; and be it further

RESOLVED, That the Arizona Medical Association offer a prize of one hundred dollars each year to any publisher who can prove that he has rejected a bad manuscript.

NOT ADOPTED MAY 1, 1976

Resolution 8-76

Subject: KABOOM

WHEREAS, Governmental meddling in medical practice is undesirable; and

WHEREAS, Entities are currently referred to in everyday parlance by their initials, such as HEW, PSRO, HMO, ETC.; and

WHEREAS, A concept has been recently formulated bearing the initials K.A.B.O.O.M. (for Keep All Bureaucrats Out of Medicine); therefore be it

RESOLVED, That the Arizona Medical Association endorse the KABOOM concept.

NOT ADOPTED MAY 1, 1976

Resolution 9-76

Subject: 1977 CALENDAR YEAR BUDGET OF INCOME AND EXPENSE

WHEREAS, It is customary for the House of Delegates to approve the Budget of Income and Expenditures for the next succeeding calendar year of the Arizona Medical Association, Inc.; therefore be it

RESOLVED, That the following Budget of Income and Expenditures for the calendar year 1977 be adopted:

	INCOME	EXPENDITURES	CONTINGENCY
General Operations	$605,722.00	$440,025.00	$165,697.00
Committee Operations	35,000.00	79,300.00	(44,300.00)
Annual Meeting	54,000.00	54,000.00	—0—
Publishing Operations	71,760.00	72,935.00	(1,175.00)
Building Operations	50,950.00	47,600.00	3,350.00
Benevolent & Loan Operations	4,500.00	4,000.00	500.00
TOTAL	$821,932.00	$697,860.00	$124,072.00

and be it further

RESOLVED, That the annual dues of the Arizona Medical Association, Inc. be $250 for Active members, with $230 gong to General Operations Budget and $20 going to the Publishing Operations Budget; and be it further

RESOLVED, That the Service member dues be $62.50 with $42.50 going to the General Operations Budget and $20 going to the Publishing Operations Budget; and be it further

RESOLVED, That the Intern or Resident Active member dues be $25, with $5 going to the General Operations Budget and $20 going to the Publishing Operations Budget; and be it further

RESOLVED, That a poll of all licensed Physicians practicing in Arizona be conducted, in conjunction with the poll on unified membership, regarding *Arizona Medicine*, its composition, suggested changes and its continuance; and be it further

RESOLVED, That the Board of Directors be directed to consider the propriety of a continuing $50,000 per year loss to the Arizona Medical Association in the publication of *Arizona Medicine* and prepare an appropriate resolution for introduction at the 1977 House of Delegates meeting.

ADOPTED, AS AMENDED, MAY 1, 1976

Resolution 10-76

Subject: ENFORCEMENT OF 55 M.P.H. SPEED LIMIT

WHEREAS, Statistics compiled by the National Safety Council and National Center for Health Statistics indicate a significant decrease in the number of automobile accidents, and morbidity and mortality resulting therefrom, both nationwide and in the State of Arizona, since the institution of the maximum 55 mile-per-hour speed limit on the open highways; and

WHEREAS, Recent reports from the Arizona Department of Public Safety indicate that progressively more motorists are failing to heed the 55 mile-per-hour limit; therefore be it

RESOLVED, That the Arizona Medical Association urge the Department of Public Safety to enforce the 55 mile-per-hour speed limit to the best of its ability.

TABLED, MAY 1, 1976

Resolution 11-76

Subject: DECRIMINALIZATION OF SEXUAL PRACTICES

WHEREAS, The Arizona Revised Statutes still contain laws which criminalize many sexual practices commonly occuring among and between consenting adults; and

WHEREAS, These laws are clearly not attuned to sexual mores prevalent in American society today, are an infringement of individual rights, and are, in practical terms, altogether unenforceable; therefore be it

RESOLVED, That the Arizona Medical Association endorse any or all legislative efforts to decriminalize all sexual practices among and between consenting adults.

TABLED, MAY 1, 1976

Resolution 12-76

Subject: HOUSESTAFF CONTRACTS AND COLLECTIVE BARGAINING

WHEREAS, The American Medical Association has recognized housestaff as employees of the hospitals in which they are providing their services and receiving their training; and

WHEREAS, The AMA has published and endorsed their own concept of "Guidelines for Housestaff Contracts"; and

WHEREAS. Dozens of housestaff groups are currently bargaining collectively with their hospitals' administrations with a record of very few impasses; and

WHEREAS, The AMA House of Delegates has at its most recent convention adopted the policy that it is appropriate for constituent medical societies to aid, assist, or represent interns and residents and attending physicians collectively in resolving disputes with hospitals and others; and

WHEREAS, The AMA Board of Trustees has subsequently authorized the Executive Vice President to offer the assistance of the Division of Professional Relationship(s) to assist the constituent societies in their efforts to aid interns and residents in collective bargaining; and

WHEREAS, There exists an Arizona Housestaff Section composed of representatives of all the training programs in the State of Arizona, and which at this annual meeting of the Arizona Medical Association is now a recognized constituent body; and

WHEREAS, There have been attempts made, both within Arizona and on the national level, including the recent ruling of the National Labor Relations Board dated March 19, 1976, to misrepresent the nation's housestaff as primarily students whose absence would not materially affect

patient care in the institutions wherein they are employed; and

WHEREAS, This form of misrepresentation is clearly counter to the desires of the American Medical Association, the Arizona Housestaff Section, the Interns and Residents Business Section of the American Medical Association, and the Physicians National Housestaff Association; therefore be it

RESOLVED, That the House of Delegates of the Arizona Medical Association endorse and ratify the "Guidelines for Housestaff Contracts" as adopted by the House of Delegates of the AMA and the ArMA Board of Directors; and be it further

RESOLVED, That the House of Delegates endorse the concept of Collective Bargaining for Housestaff as adopted by the AMA House of Delegates at its most recent convention in Hawaii and offer assistance to housestaff in Arizona who have an interest in forming collective bargaining units; and be it further

RESOLVED, That the House of Delegates hereby recognize the Housestaff Section of ArMA as the liaison between ArMA and the respective democratically selected housestaff leaders of the respective housestaff associations and/or bargaining units in the State of Arizona, and through the Section consider providing assistance in resolving disputes with hospitals (and others) as adopted by the AMA House of Delegates; and be it further

RESOLVED, That housestaff are entitled to their own collective bargaining units; and be it further

RESOLVED, That the Board of Directors shall respond appropriately to any institution accredited by the AMA and/or the JCAH when an official of that institution acts in a way to obstruct housestaff in their attempts to organize at that institution, or when such an official indicates by word or deed that housestaff does not have the right to bargain collectively.

ADOPTED, AS AMENDED, MAY 1, 1976

Resolution 13-76

Subject: SOCIAL SECURITY NUMBER

WHEREAS, In 1934 the Social Security Act was created as a social insurance vehicle; and

WHEREAS, A numbering identifier was assigned to every covered insured; and

WHEREAS, There are federal regulations specifying that the Social Security number may only be required for Social Security Administration and Internal Revenue Service purposes with all other uses being voluntary; and

WHEREAS, We are now being informed by the Department of Health, Education and Welfare that they are mandating the use of such Social Security number as an identifier on all hospital records in order to enable the Bureau of Quality Assurance to tie medical records to an individual physician; therefore be it

RESOLVED, That the Arizona Medical Association is herewith expressing its total opposition to the use of the Social Security number as a universal numbering identifier.

SUBSTITUTE RESOLUTION ADOPTED, MAY 1, 1976

Resolution 14-76

Subject: ARIZONA MEDICAL ASSOCIATION DUES

WHEREAS, A number of physicians have felt the strong inflationary pressures of our times; and

WHEREAS, It is obligatory for the Association to make membership as little a hardship as possible; therefore be it

RESOLVED, That the Arizona Medical Association offer the option of dues payment on an instalment basis, this option to require the first instalment be fully paid by February 15 of the year for which such dues are levied. The delinquent dates for subsequent payments shall be determined by the Board, but in any event the final payment would be delinquent after October 1; and be it futher

RESOLVED, That the Arizona Medical Association Delegates to the American Medical Association be instructed to submit, if appropriate in their judgment, a similar resolution to the American Medical Association House of Delegates; and be it further

RESOLVED, That a copy of this resolution be sumitted to the officers, Board of Trustees and Speaker of the House of Delegates of the AMA for their information and consideration.

SUBSTITUTE RESOLUTION ADOPTED, AS AMENDED, MAY 1, 1976

Resolution 15-76

Subject: MALPRACTICE

TABLED, MAY 1, 1976, REFER TO RESOLUTION 24-76

Resolution 16-76

Subject: OPTIONAL AMERICAN MEDICAL ASSOCIATION MEMBERSHIP

TABLED, MAY 1, 1976, REFER TO RESOLUTION 5-76

Resolution 17-76

Subject: MEDICAID

WHEREAS, Medicaid legislation has a history in other states of grossly expanding costs and difficulties of bureaucratic control; and

WHEREAS, The Arizona Medical Association has repeatedly supported the rights of all Arizona citizenry to the best medical care available and supportable; and

WHEREAS, The health care systems currently extant in some areas of Arizona may be sufficient and financially sound; therefore be it

RESOLVED, That the Arizona Medical Association actively encourage our legislative bodies and state health departmental organizations to scrutinize all pending Medicaid legislation in a manner which recognizes geographic needs and the adequacies or inadequacies of existing local systems of medical care.

SUBSTITUTE RESOLUTION ADOPTED, MAY 1, 1976

Resolution 18-76

Subject: RATIFICATION OF LOAN

WHEREAS, The Board of Directors of the corporation on February 7, 1976 and on March 7, 1976, duly authorized the borrowing of $1,000,000 from The Valley National Bank of Arizona and First National Bank of Arizona for the purpose of advancing such funds to Mutual Insurance Company of Arizona ("MICA") in order to provide MICA with its initial capital requirements; and

WHEREAS, The borrowing by the corporation and the advance to MICA were completed by the officers of the corporation on March 18, 1976; and

WHEREAS, It has been suggested that the members of the House of Delegates approve and ratify such borrowing and advance; therefore be it

RESOLVED, That the borrowing of $1,000,000 by the corporation from The Valley National Bank of Arizona and First National Bank of Arizona and the advance of such funds to MICA for the purposes of providing its

initial capital be and the same is hereby ratified and approved by the House of Delegates.

ADOPTED MAY 1, 1976

The Speaker announced that Resolution 18-76 was adopted with at least the necessary three-fourths votes.

Resolution 19-76

Subject: DISCRIMINATION IN PLACEMENT SERVICE BULLETINS

WHEREAS, The Arizona Medical Association provides a placement service to physicians seeking positions in Arizona; and

WHEREAS, The bulletin published in connection with this placement service contains some listings specifying males only, thereby discriminating against female physicians; therefore be it

RESOLVED, That the placement bulletin and any other information provided by the Arizona Medical Association to physicians seeking job placement, not discriminate on the basis of sex, race or religious affiliation.

ADOPTED MAY 1, 1976

Resolution 20-76

Subject: PRIMARY CARE DEFINED

WHEREAS, The original Millis report, that originated the term "primary care" predicted confusion; and

WHEREAS, The American Medical Association House of Delegates and AMA testimony before Congressional Committees use the term "primary care specialties"; and

WHEREAS, There appears to be confusion as to the meaning of primary care and primary care physicians; and

WHEREAS, Primary care is a *function, not a discipline* provided by all physicians, but most often by internists, pediatricians, general practitioners, obstetricians, gynecologists and family practitioners; be it therefore

RESOLVED, That the medical specialties of family practice, internal medicine, pediatrics and obstetrics/gynecology be *recognized formally* as major components of the profession which, together with general practice, provide most primary medical care to the American public; and be it further

RESOLVED, That the Arizona Medical Association officials be urged to communicate this resolution to the Arizona State Legislature.

TABLED, MAY 1, 1976

Resolution 21-76

Subject: CLINICAL TEACHING OF "PRIMARY CARE"

WHEREAS, State and federal laws requiring medical schools to establish an identifiable administrative unit to provide clinical instruction in family medicine or primary care invade the academic integrity of the institution; and

WHEREAS, Such laws eliminate the opportunity for decision by the institution as to how best to further competence in instruction in primary care; and

WHEREAS, Primary care is a function, not a discipline provided by all physicians, but most often by internists, pediatricians, general practitioners, obstetricians, gynecologists and family practitioners; be it therefore

RESOLVED, That the Arizona Medical Association oppose state legislation requiring the establishment of an identifiable administrative unit to provide clinical instruction in family medicine or primary care.

TABLED, MAY 1, 1976

Resolution 22-76

Subject: 1976 ARIZONA MEDICAL SERVICES TERMINOLOGY AND DESCRIPTIVE INDEX

NOT ADOPTED, MAY 1, 1976, REFER TO SUBSTITUTE RESOLUTION 1-76 ADOPTED AS AMENDED, MAY 1, 1976

Resolution 23-76

Subject: RECOGNITION OF THE EFFORTS OF THE GOVERNOR AND THE 32ND LEGISLATURE

WHEREAS, The Governor of the State of Arizona, the Honorable Raul H. Castro, called a Special Session of the 32nd Legislature for the sole purpose of dealing with the malpractice insurance crisis then existing and averting the threatened breakdown of health care delivery in the state beginning April 1, 1976; and

WHEREAS, The leadership of both Houses of the Legislature and both political parties successfully worked together to construct a sound and innovative solution to the immediate problem; and

WHEREAS, The entire membership of both Houses of the Legislature studied, refined and adopted that solution in the form of H.B. 2001; therefore be it

RESOLVED, That the Arizona Medical Association, Inc. congratulates the Governor for having recognized the importance of the malpractice insurance crisis and its threat to the continued successful delivery of health care in Arizona on and after April 1, 1976 as the principal problem facing the people of Arizona; and be it further

RESOLVED, That the Arizona Medical Association, Inc. congratulates all of the members of the 32nd Legislature for constructing and adopting a sound and innovative solution to the immediate problem which solution will permit health care delivery to continue during the time required to study, select and adopt the permanent solution best suited to the needs of the people of this state.

ADOPTED, AS AMENDED, MAY 1, 1976

Resolution 24-76

Subject: CONTINUATION OF MALPRACTICE INSURANCE CRISIS COMMITTEE AND SPECIAL ASSESSMENT

WHEREAS, The Arizona Medical Association's Malpractice Insurance Crisis Committee, under the wise and forceful leadership of Dr. Jack E. Brooks, was among those instrumental first, in causing the Governor to call a special session of the 32nd Legislature devoted solely to the malpractice insurance crisis; second, in causing the leadership of both Houses and both parties to address themselves constructively and vigorously to a sound and innovative solution to the problem which followed closely the guidelines of the Committee's White Paper; and third, in working with that leadership to educate and encourage the Legislature to pass H.B. 2001 into law; and

WHEREAS, All who have addressed themselves to the problem are unanimous in their conviction that while the legislative solutions achieved are the best that could have been expected under the circumstances, nonetheless, the continued cost increases which are forcasted make these solutions necessarily temporary; and

WHEREAS, Those familiar with the problem are equally congnizant of the fact that restrictions imposed by the Arizona Constitution together with a lack of a sufficient body of experience made impossible the adoption of a permanent solution by the 32nd Legislature; and

WHEREAS, Achieving a permanent solution, at the very least, will require an expert in-depth study of appropriate alternatives and the need for constitutional amendments

followed by statewide education and support thereof leading finally, if necessary, to a statewide election amending the Arizona Constitution; and

WHEREAS, Recognizing that while the Malpractice Insurance Crisis Committee is to be congratulated for its truly outstanding success in helping to prevent the breakdown of health care in Arizona on and after April 1, 1976, it still has an even greater task before it, being to discover and then achieve such permanent solution to the problem as on the one hand will go farthest in aiding most patients adversely affected by medical malpractice while on the other hand keeping the cost of medical malpractice insurance permanently within affordable limits to all of the deliverers of health care in Arizona; therefore be it

RESOLVED, That the members of the Malpractice Insurance Crisis Committee being Dr. Jack E. Brooks, Chairman and Drs. Hayes Caldwell, Donald E. Howland, Vernor F. Lovett, Arthur R. Nelson, Donald F. Schaller and Richard W. Switzer be and they are hereby comgratulated for their outstanding achievement in taking the leadership in helping to prevent the breakdown of health care delivery in Arizona in the Spring of 1976; and be it further

RESOLVED, That the Malpractice Insurance Crisis Committee be and is hereby continued in existence and empowered mittee be and is hereby continued in existence and empowered to do those things which it deems best calculated to achieve a sound permanent solution to the medical malpractice insurance problem; and be it further

RESOLVED, That to aid the Committee in furtherance of this goal, the Arizona Medical Association hereby assesses each of its members $100 for the calendar year 1976 and that an invitation be extended to all practicing licensed physicians in Arizona, including Osteopathic physicians, to participate and contribute to this fund; and be it further

RESOLVED, That with the notification of assessment an itemized statement of expenditures from the previous $100 assessment be forwarded to each member.

ADOPTED, AS AMENDED, MAY 1, 1976

Resolution 25-76

Subject: DISENGAGEMENT OF ARIZONA MEDICAL ASSOCIATION WITH BLUE CROSS AND BLUE SHIELD OF ARIZONA, INC.

Resolution 26-76

Subject: RELATIONSHIP OF ARIZONA MEDICAL ASSOCIATION TO CORPORATE BODY OF BLUE SHIELD OF ARIZONA, INC.

RESOLUTION 25-76 AND RESOLUTION 26-76 COMBINED AND CONSIDERED AS FOLLOWS:

Resolution 25-76

Subject: RELATIONSHIP OF ARIZONA MEDICAL ASSOCIATION TO CORPORATE BODY OF BLUE SHIELD OF ARIZONA, INC.

WHEREAS, Blue Shield of Arizona is an insurance company serving the State of Arizona in the health care field; and

WHEREAS, The present composition of the corporate body of Blue Shield is felt to be no longer appropriate; therefore be it

RESOLVED, That the Arizona Medical Association encourage the corporate body of Blue Shield to dissociate itself from any and all relationships with the Arizona Medical Association as soon as feasible.

SUBSTITUTE RESOLUTION ADOPTED, AS AMENDED, MAY 1, 1976

Resolution 27-76

Subject: UNNECESSARY AIR TRAVEL EXPENSE

WHEREAS, Physicians generally are intolerant of bureaucratic extravagance by other organizations; and

WHEREAS, Non first class air travel is generally available; therefore be it

RESOLVED, That representatives of ArMA be encouraged to travel in a manner that will not impose unnecessary expense on their colleagues.

SUBSTITUTE RESOLUTION ADOPTED, AS AMENDED, MAY 1, 1976

Resolution 28-76

Subject: COMMENDATION OF EFFORTS OF ATTORNEYS IN MALPRACTICE INSURANCE CRISIS

WHEREAS, The successful efforts of the Arizona Medical Association through its Malpractice Insurance Crisis Committee to secure legislative relief of the malpractice crisis could not have succeeded without the outstanding talent and heculean efforts of attorneys Edward Jacobson and Shyrl Neilsen; and

WHEREAS, Mr. Jacobson and Mr. Neilsen gave of their knowledge and time far beyond the call of duty; therefore be it

RESOLVED, That the Arizona Medical Association through its House of Delegates go on record as being deeply grateful to attorneys Edward Jacobson and Shyrl Neilsen for their unstinting contributions towards helping to accomplish significant remedial legislation for the partial solution of the malpractice insurance crisis.

ADOPTED, MAY 1, 1976

Resolution 29-76

Subject: COMMENDATION OF SENIOR AMA DELEGATE, SEYMOUR I. SHAPIRO, M.D.

WHEREAS, The efficacy of a small state representation in any national organization is directly proportional to the stature, ability, and dedication of its elected representatives; and

WHEREAS, Arizona's presence in the American Medical Association has shown forth clearly in the election of a member of the Board of Trustees and in assuming leadership among the Western States representatives; and

WHEREAS, This clarion voice has emanated from a delegation so capably orchestrated by its senior delegate, Seymour I. Shapiro, M.D., whose outstanding capabilities have been recognized by AMA delegates from other states and by his election as president of the Rocky Mountain States Conference; therefore be it

RESOLVED, That this 85th delegate assembly of the Arizona Medical Association here assembled express its regrets at the departure of Dr. Shapiro from the Arizona delegation to the American Medical Association, vote its unanimous gratitude for his past activities on its behalf and grant him its best wishes in his future endeavors.

ADOPTED, MAY 1, 1976

Resolution 30-76

Subject: INDIVIDUALLY INITIATED RESOLUTIONS

WHEREAS, The medical field is buffetted by conflict at an accelerating rate which has reached crescendo proportions; and

WHEREAS, Each of these confrontations may impinge on an individual member with such intensity as to prompt him to introduce resolutions for action by the Arizona Medical Association; and

WHEREAS, This situation has begun to create a volume of resolution material which is overwhelming for the reference committee; and

WHEREAS, The Arizona Medical Association must find a method to focus the attention of the House of Delegates on those problems of highest priority to the greatest numbers of the member physicians; therefore be it

RESOLVED, That the House of Delegates instruct the By-laws Committee to consider alternative methods to keep the volume of resolution material manageable without isolating the organization from the needs of the individual member physician; and be it further

RESOLVED, That one such consideration be the requirement of five co-sponsors for individually initiated resolutions.

ADOPTED, MAY 1, 1976

Reference Committee on Amendments

Report of the Reference Committee on Amendments as deleted, amended or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

(Note: all bracketed, italicized words represent deletions; all fully capitalized words are new material.)

Resolution A-1-76

Subject: COLLECTION PROCEDURE FOR SPECIAL ASSESSMENTS CHAPTER IX, Dues and Assessments Section 2. Fixing of Special Assessments; Payment; Collection; Enforcement

RESOLVED, That Chapter IX, Section 2 (b) be amended to read:

(b) Special assessments shall be payable thirty days after notice of such has been mailed, and shall be delinquent sixty days after said date. *[The Secretary of each county society shall collect and forward the special assessment to the Association Secretary.]*

and be it further

RESOLVED, that Chapter IX, Dues and Assessments — Section 5. Exemptions be amended to read:

(A) Members exempt from the payment of dues *[and sepcial assessments]* shall include (1) 50 Year Club, (2) Associate Members, (3) Affiliate Members, and (4) Honorary Members. Members 70 years of age or older, and other members by reason of physical disability, illness, or financial hardship may also be exempted. A member must request such exemption, and *[be approved therefor]* SECURE RECOMMENDATION by *[the]* HIS county medical society and BE APPROVED THEREFOR by the Board.

(B) MEMBERS EXEMPT FROM THE PAYMENT OF SPECIAL ASSESSMENTS SHALL INCLUDE(1) 50 YEAR CLUB, (2) ASSOCIATE MEMBERS, (3) AFFILIATE MEMBERS, AND. (4) HONORARY MEMBERS. MEMBERS 70 YEARS OF AGE OR OLDER, AND OTHER MEMBERS BY REASON OF PHYSICAL DISABILITY, ILLNESS. OR FINANCIAL HARDSHIP MAY ALSO BE EXEMPTED. A MEMBER MUST REQUEST SUCH EXEMPTION, AND BE APPROVED THEREFORE BY THE BOARD.

(C) Exemption from payment of dues to the American Medical Association shall be in accordance with the rules of that association.

ADOPTED, AS AMENDED, MAY 1, 1976

Resolution A-2-76

Subject: INSTALLMENT PAYMENT OF DUES CHAPTER IX, Dues and Assessments, Section 1. Fixing of Annual Dues; Payments; Reinstatements; Collections; Enforcement

RESOLVED, That Chapter IX, Section 1 be amended by adding:

(d) THE BOARD MAY, UPON THE RECOMMENDATION OF A COUNTY SOCIETY, AUTHORIZE INSTALLMENT PAYMENT OF DUES BY A MEMBER. THE FIRST PAYMENT SHALL BE DELINQUENT AFTER FEBRUARY 15 OF THE YEAR FOR WHICH SUCH DUES ARE LEVIED. THE DELINQUENT DATES FOR SUBSEQUENT PAYMENTS SHALL BE DETERMINED BY THE BOARD, BUT IN ANY EVENT THE FINAL PAYMENT WOULD BE DELINQUENT AFTER OCTOBER 1. ANY MEMBER WHOSE PAYMENT HAS NOT BEEN REMITTED TO THE ASSOCIATION SECRETARY ON OR BEFORE THE DELINQUENT DATE SHALL STAND SUSPENDED UNTIL SUCH DELINQUENCY IS CORRECTED. ANY INSTALLMENT PROGRAM FOR PAYING DUES AND ASSESSMENTS FOR THE AMERICAN MEDICAL ASSOCIATION SHALL BE DETERMINED BY THE AMERICAN MEDICAL ASSOCIATION.

ADOPTED, MAY 1, 1976

Resolution A-3-76

Subject: UNIFIED MEMBERSHIP

TABLED, MAY 1, 1976, REFER TO SUBSTITUTE RESOLUTION 5-76, ADOPTED AS AMENDED, MAY 1, 1976

Resolution A-4-76

Subject: UPDATING ARTICLES OF INCORPORATION

WHEREAS, The Arizona corporation laws have been amended, effective July 1, 1976, and this corporation desires to take advantage of such new corporation laws; therefore be it

RESOLVED, That Article IV of the corporation's Articles of Incorporation be amended to read:

ARTICLE IV

The time for the commencement of this corporation shall be the date of the filing of these Articles of Incorporation as required by law and the term of its corporate existence shall be twenty-five (25) years *[thereafter]* AFTER JUNE 19, 1975, with privilege of renewal as provided by law, PROVIDED THAT SUCH TWENTY-FIVE (25) YEAR LIMITATION SHALL NOT APPLY IF AND WHEN IT IS NO LONGER REQUIRED BY ARIZONA LAW, IN WHICH CASE THE EXISTENCE OF THE CORPORATION SHALL BE PERPETUAL.

and be it further

RESOLVED, That Article XII of the corporation's Articles of Incorporation be amended to read:

ARTICLE XII

The highest amount of indebtedness or liability direct or contingent, to which this corporation may be subject at any time shall be such amount or amounts as may be authorized by three-fourths (3/4) of the votes cast with respect thereto at a lawfully held meeting of the members of the House of Delegates and approved by the Arizona Corporation Commission, PROVIDED THAT THIS

LIMITATION ON INDEBTEDNESS OR LIABILITY SHALL BE OF NO FURTHER FORCE OR EFFECT WHATSOEVER IF AND WHEN IT IS NO LONGER REQUIRED BY ARIZONA LAW.

and be it further

RESOLVED, That a new Article XIV be added to the corporation's Articles of Incorporation, to be as follows:

ARTICLE XIV

THE CORPORATION MAY INDEMNIFY ANY AND ALL OF ITS PRESENT OR FORMER DIRECTORS, OFFICERS, EMPLOYEES, OR AGENTS TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, THE CORPORATION MAY INDEMNIFY ANY AND ALL OF ITS DIRECTORS AND OFFICERS, OR FORMER DIRECTORS AND OFFICERS, AGAINST EXPENSES INCURRED BY THEM, INCLUDING LEGAL FEES, OR JUDGMENTS OR PENALTIES RENDERED OR LEVIED AGAINST ANY SUCH PERSON IN A LEGAL ACTION BROUGHT AGAINST ANY SUCH PERSON FOR ACTIONS OR OMISSIONS ALLEGED TO HAVE BEEN COMMITTED BY ANY SUCH PERSON WHILE ACTING WITHIN THE SCOPE OF HIS EMPLOYMENT AS A DIRECTOR OR OFFICER OF THE CORPORATION, PROVIDED THAT THE BOARD OF DIRECTORS SHALL DETERMINE IN GOOD FAITH THAT SUCH PERSON DID NOT ACT, FAIL TO ACT, OR REFUSE TO ACT WILFULLY OR WITH GROSS NEGLIGENCE OR WITH FRADULENT CRIMINAL INTENT IN REGARD TO THE MATTER INVOLVED IN THE ACTION.

ADOPTED, MAY 1, 1976

The Speaker announced that Resolution A-4-76 was adopted with at least the necessary three-fourths votes.

Meeting adjourned Sine Die at 11:47 p.m.

William E. Crisp, M.D.
Secretary

SPORTS AWARDS

GOLF TOURNAMENT

Garron Hale, M.D.	— Low Gross
C. T. Read, M.D.	— Low Gross
B. Baker, M.D.	— 2nd Low Gross
W. Figgs, M.D.	— 3rd Low Gross
W. T. Evans, M.D.	— 4th Low Gross
Jack Zeluff, M.D.	— Longest Drive
R. Leonard, M.D.	— Longest Drive
E. Reed, M.D.	— Closest to the Pin
W. White, M.D.	— Closest to the Pin
F. Laird, M.D.	— Longest Putt
F. D. Zahn, M.D.	— Low Net
R. Hagan, M.D.	— 2nd Low Net
R. Price, M.D.	— 3rd Low Net
I. Ehrlich, M.D.	— 4th Low Gross
O. Hardin, M.D.	— 5th Low Net
M. Wertz, M.D.	— 6th Low Net
W. Lippard, M.D.	— 7th Low Net
F. G. Figgs, M.D.	— 8th Low Net
L. Osborn, M.D.	— 9th Low Net
B. Myers, M.D.	— 10th Low Net
R. Christ, M.D.	— High Gross

OTHER WINNERS

W. Brainard, M.D.
L. Anderson, M.D.
F. Jensen, M.D.
D. Stannard, M.D.
E. G. Barnet, M.D.
D. Reichert, M.D.
C. Ernst, M.D.
L. Mooser, M.D.
R. Oyler, M.D.
D. Duncan, M.D.
C. Nevins, M.D.
A. F. Morrison, M.D.
W. Helme, M.D.
J. Giangobbe, M.D.
R. Stephens, M.D.
C. Van Epps, M.D.
H. Woodcock, M.D.
D. Minnig, M.D.
W. McGee, M.D.
E. Geever, M.D.
L. D. Beck, M.D.
M. Frarrar, M.D.
W. Hulen, M.D.
P. Moraca, M.D.

TENNIS TOURNAMENT

MEN'S DOUBLES — Drs. Hipps and Phillips
Runner-up — Drs. McCready and Munoz

MIXED DOUBLES — Dr. and Mrs. William Bohnerd
Runner-up — Dr. and Mrs. Paul Palmer

Topics Of Current Medical Interest

IN APPRECIATION OF
H. GILBERT CRECELIUS Ph.D.
DIRECTOR OF ARIZONA STATE HEALTH LABORATORY 1948-1976



In March 1976 Dr. H. Gilbert (Gil) Crecelius retired. For 28 years he has been Director of the Arizona State Health Laboratory. It is only fitting that the physicians of Arizona recongnize this long tenure of dedicated Public Service.

Dr. Crecelius, a native of New Mexico received his A.B. and M.A. at the University of South Dakota. He moved to Yale University for a Ph.D. in Microbiology with a minor in Public Health. After Military service, as Director of the hospital laboratory at a very large military installation, he was trained as a civil affairs officer to assist in restoring public health in militarily occupied areas. Gil arrived in Seoul, Korea less than a month after the war ended and immediately planned and put into effect a program to rehabilitate the laboratory services. Those of us who saw hospitals in countries that have been ravaged by war well know the task of re-establishing laboratory services.

In March 1948 when Gil arrived in Arizona the State Laboratory was three small rooms in the Capitol Annex. It was a microbiology laboratory struggling to do the usual cultures and smears. Soon the workload increased, and the laboratory expanded to the entire east end of the first floor of the Annex. Dr. Crecelius initiated plans and procedures for a new health department laboratory. In the fall of 1954 it was ready. The old laboratory encountered work loads of 100 diptheria cultures a day, and an increasing number of sputum specimens for smears for acid fast bacteria, plus the usual milk and water bacteriology.

The new facility provided great opportunity. Mycobacteria and cocci cultures could now be a new service. An enteric disease section could be loaded - 800 specimens and 200 isolates of

salmonella and shigella from Sacaton in one month. And an epidemic in one week in which 11 babies died on the Apache reservation and seven at Maricopa County Hospital from salmonellosis or shigellosis. There were crisis situations where the lab worked overtime to support the local physicians, the local hospital, and the local health department.

Arizona was one of the states which unfortunately received polio vaccine that contained live virus. This event brought the establishement of the virology section. And this prepared the laboratory for the rabies problem that had long been present but not attacked. The same serendipitous result came from the enteric disease section where the emphasis had been on bacteriology, samples had shown parasites. A new service was born, parasitology, and just in time. The assistance of the lab was requested about "measly" beef in the stockyards. In the tradition of the "shoe leather epidimologist", Gil outlined the investigation.

The results revealed that the cattle were fed with grain from Mexico, and the open cars of grain were often contaminated by riders who defecated in the grain. On arrival here the grain was ground fed to cattle. Another source was a feeding pasture in Glendale where the effluent from a large sewage settling lagoon was used to water the pasture. The parisitology section was ready to support these investigations and also to analyze the hundreds of stool specimens that were submitted.

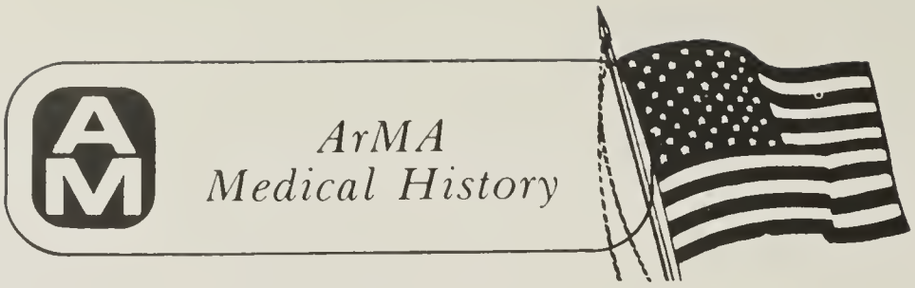
The late '50's and early sixties saw the study of soil samples that established the lower Sonoran Desert as a home of coccidiomycosis, and new media upon which to grow it. Pesticides, expecially DDT became a matter of concern, rapidly followed by environmental chemistry to determine pollution of all kinds in water, air and food.

Dr. Crecelius has for 28 years looked forward to determine what studies should be initiated to improve health in Arizona. Numerous commisioners of health have called him to discuss their suspicions about a developing problem and found that he was already accumulating data, or to ask about a new technique or instrument and found that it was being studied or was already in the budget, or to ask his advice as to whether part of the virology lab could be used for tissue culture for karotyping and found that he was already planning (or scheming) to try that.

There is little space to mention his love and service to his family, his church, and his community. These equally received outstanding contributions from a husband and father, a member, and a citizen. In addition he maintained his readiness as an Army Reserve Officer to serve his country if the need arose.

Arizona will miss the man who laid a solid foundation for Preventive Medicine and Public Health in Arizona. Each of us has had occasion t send a specimen to his laboratory and we knew that his report would be accurate and complete. We hope that his counsel will still be available, but we wish that he finds retirement that which we all desire - CONTENTMENT.

Louis C. Kossuth, M.D.
Commissioner of Health,
State of Arizona 1970-74



A BICENTENNIAL SALUTE TO HEALTH SERVICES IN THE VERDE VALLEY OF ARIZONA

MARTHA (MATTIE) LEYEL & M. E. LINKERT

Verde - verdant, green. The Spanish word makes the places name alliterative and pleasing to the ear, and holds true today, too, to what the eye beholds from February into early November. For those who think of Arizona as a dry and barren land, the area is a revelation. The Verde Valley is like a fertile forty mile stretch of the Midwest, about thirty miles wide, surrounded by 7,000 foot mountains and mesas, heavily timbered slopes, and colorful red rock formations second only to the spectacular grandeur to the state's Grand Canyon and the Monument Valley.

Several small communities make up the Verde Valley. They are, Camp Verde, Clarkdale, Cottonwood, Cornville, Jerome, Lake Montezuma, Rimrock, McGuireville and Sedona. The historical significance of each of these communities would make a story of themselves. Camp Verde is the location of the old cavalry fort erected in the 1860's, and the location of Montezuma Castle and Montezuma Well which were named in memory of that great Aztec emperor who never traveled that far north and lived four centuries after the apartment dwellers had built the five or six storied structures in the limestone cliffs. Clarkdale was founded by Senator W. A. Clark of Montana, and from 1911 - 1950 this was the company-owned smelter town, established to process the ores from the mines of Jerome. Phelps-Dodge Company sold the mines in 1950 and moved most of the population to new operations in Ajo, Morenci and Bisbee. Jerome has had considerable publicity in the past and most recent years, first as the "most unique" mining town in Arizona and later as the largest ghost mining town in the United States. There were some 15,000 mine employees in its 'boom times' with an annual payroll of $20 million. Cottonwood, founded in 1895, has been mostly associated with trade and cattle raising interests in the area. It is best recognized today for its modern hospital facility, the Marcus J. Lawrence Memorial Hospital. Sedona has the magnificent red rock scenery and has become a popular artist and retirement community. The remainder of the smaller communities blend into the larger ones and reflect various combinations of the background and historical luster of the above.

CAMP VERDE 1869 - 1891

The earliest material on health services in the Verde Valley has been found in a June, 1869 Sanitary Report of Camp Verde, A. T. Commanded by Wm McK Owens, 1st Lt. 21st Inf. (Fort Verde).

In relation to the hospital services at the fort the following was recorded:

Facilities: "At present 1/2 of last built set of quarters for men is used at Hospital. A very good building is in the process of erection. The ward room being only 20' x 30' is too small for the probable want of the sick."

Kitchen & Laundry room - "Rooms very poor, fixtures and furniture sufficient."

Dietary: "Difference from the diet table only such as is inevitable here. Cooked by a soldier detailed as Hospital Cook. Inspected by Steward and Surgeon. Served at table in kitchen or on tray in bed."

Staff: Stewards: "George Reich, Actg Hospital Steward, Pvt., Co. C, 14th Inf. an efficient Steward. Conduct: Excellent."

Attendants: "1st - W. Kuerner, 2nd - Thos Hogan, 3rd - Michael Ryan, Pvts, Co. C, 14th Inf. 1st from Feb. 1, 1869 to June 21, 1869. 2nd from June 1, 1868 to May 22, 1869. 3rd from June 1, 1869 to June 30, 1869."

Cleanliness of Patients: "The men bathe daily in the Verde, while in health. Cleanliness in and out of Hospital is very fair."

Diseases & Conditions: "Malarial Fevers, Diarrhea & Dysentaries."
"The above mentioned diseases are most prevalent among men on hard duty, who use water from the river and spend much of their time in places where rank vegetation is produced by heat and moisture."

"May 6, 1869, 9 men guarding a train were attacked by Indians and 5 shot with bullets. 1 died-shot through abdomin. 1 had an arm amputated. 1 had radius of left forearm broken by ball. 2 others slight wounds. 1 teamster shot in hip with arrow."

Mortality: "The case mentioned above is the only one during the half year."

Instruments: "Hospital instruments, many of them worn out. No personal instruments."

Hospital Clothing: "Amount: quite enough. Condition: good except drawers all size #1 so small as to be almost useless and socks generally very inferior quality. Slippers, mere rags."

The new Hospital was built at the fort and operated from 1870 - 1891. Mrs. Elizabeth Young, a native of Canada, with her two small sons George and Len, came to Camp Verde in the summer of 1871 as Hospital Matron with the 5th U.S. Cavalry. She served in that capacity at Camp Verde for more than sixteen years and cared for her sons who grew up to manhood there. Her hardships were naturally many in an Indian country such as Arizona was at that time.

There was no physician in the Verde Valley for several years after the abandonment of the Military Post, so Grandma Young - as she was familiarly known - was doctor, nurse and all.

Grandma Young died at her home near Camp Verde September 14, 1905. Of the two sons who came as babies with her to the Verde Valley, George survives and still lives in Yavapai county.

The Hospital services for the Verde Valley then switched to Jerome and later to Cottonwood. Camp Verde had to wait until the 60's to have the first doctors offices for their community.

JEROME 1894 - 1950

As the mining companies arrived on the scene in the Verde Valley, it became apparent that health facilities were needed for their employees and their families. The first hospital was built in Jerome in 1894 and was a wooden structured, many-storied building. This was replaced with a more sturdy building in 1899. When abandoned, it was called the Hampton House and was used to house the mine workers. In 1917 a third hospital was built by the company but due to the fact that it was built over a fault in the earth created by the mining in the region, it had to be abandoned. In 1927 a most well equipped and modern hospital was built and is still recognized as the old Jerome hospital today. This three story building still has the birth and death records of vanished Valley residents in the locked safe. Its windows commanded a glorious sweep of distant shadows and highlights, from the sloping hills around Camp Verde to the rimrock mouth of Sycamore Canyon and beyond Flagstaff, the whitecaps of the San Francisco Peaks which rise to the highest point in Arizona above the long fringe of Coconino National Forest timber. This lovely old hospital continued operation until 1952 closing its doors soon after the Phelps-Dodge Company vacated the area.

CLARKDALE 1920 - 1952

When the First Aid station at the smelter, with one nurse, became inadequate to handle the caseload, a doctors office (later clinic) was set up in the early 1920's in the building that is now the Clarkdale Town Hall. The physicians from the Jerome Hospital also attended to the patients in this clinic. There seems to be some confusion, but it is believed that this clinic ceased functioning about 1952 when the hospital in Jerome closed its doors. The building was then abandoned for several years. With the incorporation of Clarkdale in 1957 the premises were obtained for the Town Hall (about the end of 1958).

CLEMENCEAU 1928 - 1938

At the location of the Clemenceau smelter in Cottonwood, the United Verde Extension Mining Company established a health facility for their employees and their families. This was a doctors office but often was referred to as a clinic or hospital. The confusion stemmed from the fact that there was an operating room and small recovery room in the building. Here emergency suturing, tonsillectomies, etc. were done by the two physicians that worked there over the year. The two doctors were Dr. James Moore and Dr. Robert K. Hilton. One nurse was always available to assist the doctors.

A railway connected the Clemenceau smelter with Jerome. This railway ran from Clemenceau via Clarkdale through Josephine Tunnel to Jerome. Although the bridges are down, the railroad bed is still evident.

The health facility was located in the old building behind the former Big John's Furniture Store on Main Street near the Bypass Road in Cottonwood. The doctor's office closed in the late 1940's when the smelter closed.

COTTONWOOD 1939 - 1975

Marcus J. Lawrence and his mother came to the Verde Valley in 1931 from Washington, D.C., but they were originally from Cleveland, Ohio. In December, 1933, in partnership with Bruce Brockett, Lawrence bought the V Bar V Cattle Company. When he died in 1938, Mrs. Carrie Lawrence first thought of building a bridge as a memorial to her son. It was noted at the time that Dr. A. C. Carlson was largely responsible for convincing Mrs. Lawrence a clinic would be a great service to the community. So, in 1939 an out-patient clinic was constructed in Cottonwood located at the present location of the Cottonwood Resident Hotel on 89A. This facility contained offices, x-ray equipment and an operating room. It was officially incorporated as a clinic on June 2, 1939.

Dr. A. C. Carlson served as the first hospital administrator until 1955 when he left the area for a private practice in Phoenix. He was also the first staff doctor of the clinic which would later grow into a hospital. Other doctors associated with the first clinic were Dr. Oaks, staff physician at the Phelps-Dodge Hospital in Jerome, Dr. Elvie B. Jolley, and Dr. J. T. Taylor. Mrs. Blanche Gibson was the first nurse at the clinic and was later succeeded by Esther Durham.

It wasn't until 1945 that the small county clinic became a hospital. At that time the first of two major expansions were made, a 24 bed unit was established and expanded to 38 beds two years later. The expansions were paid for by contributions of $5 to $55,000 by Valley residents. Mrs. Lawrence continued to be a major contributor and even established a trust fund in 1939 to pay for maintenance of the building.

Dr. W. L. Mellon, later to operate a hospital in Haiti, was also a major backer of the project. The incorporation of the hospital occurred on April 24, 1947. The first Director of Nursing for this new hospital was Martha (Mattie) Leyel, R. N., with a nursing staff of 4 registered nurses, 2 aides, and 2 part-time registered nurses. Thus, as the decade was coming to a close, the health care center of the Verde Valley was being transferred from the mining town of Jerome to Cottonwood, for as 1950 approached, the Phelps-Dodge Company would move out of the Valley and the hospital in Jerome would start phasing out.

A student nurse program for rural nursing was started in May 1953 and continued to June 1956. These students were from the Phoenix nursing schools.

Roland W. Wilpitz became administrator of the Lawrence Memorial Hospital on May 1, 1957. He was born in Texas, served in the Navy Medical Corps during World War II and prepared for his career at the University of Arizona at Tucson. Upon receiving his BA degree he became superintendent of the Arizona State Elks Hospital in Tucson. He received an MA degree in hospital administration at Northwestern University and took his residency at Santa Barbara Cottage Hospital before moving to the Valley. In

1960 he saw the need for a new hospital to serve the community and began working towards that goal. In 1972 he was chosen "Man of the Year" by the local Chamber of Commerce.

In the meantime with the increased use of the facilities following the closure of the mining hospital and clinic, as well as having specialists coming to the hospital from Phoenix, it was necessary to build four doctors offices in 1962. The nursing staff had also increased to 10 registered nurses, 2 part-time registered nurses, 5 licensed practical nurses, and 6 nursing aides.

At this time the hospital was establishing a considerable reputation in the West for it was often referred to as "The Little Mayo of the West" and drew patients not only from the entire state of Arizona but from most of the Southwest.

On September 26, 1965 the goal had been achieved and the patients were transferred from the old hospital on 89A to the new 50 bed facility located near the Cottonwood Elementary School on Main Street. The new, ultramodern, enlarged facility provided the physicians and nurses with an improved patient care area and more backup services (laboratory, x-ray, dietary, etc.) to assist them in providing quality patient care. Each of these areas were staffed with highly qualified personnel enhancing the overall effectiveness of the health services to the people of the Verde Valley. The physicians had an office wing attached to the hospital which proved of value to both parties. Specialists continued to come from Phoenix providing clinics weekly, bi-weekly, or when required for such services as: plastic surgery, orthodontia, ENT, ophthalmology, internal medicine, urology and orthopedics.

In the new hospital Roland Wilpitz continued as the hospital administrator, "Mattie" Leyel became the assistant administrator, and Mrs. Bette Hart became the director of nurses.

In 1968 the Skilled Nursing Facility (previously called the Extended Care wing) was completed. This was a 20 bed extended wing to the main hospital but in 1972 there was an alteration of the beds leaving SNF with 10 beds and adding 10 beds to the acute care general patients. This wing was dedicated to Mrs. Martha (Mattie) Leyel "in loving appreciation and recognition of her inflexible devotion, loyalty and efforts in the interest of nursing during her many years of service to the Marcus J. Lawrence Memorial Hospital." Mattie later retired but soon was back devoting many hours as a 'pink lady' in the Hospital Auxiliary, where she is seen today.

In the same year on February 21, 1968 the first meeting of the Hospital Auxiliary was held and the organization founded. The first president was Mrs. Carol Ogden and there were 13 charter members. They are called the 'pink ladies' in the hospital.

In 1972 the Rehabilitation wing of the hospital was completed. This included the additional services of Physical Therapy, Occupational Therapy, Respiratory Therapy, and Social Service. At the same time the classroom teaching facility was completed and equipped with the latest audiovisual equipment and teaching aids. With the employment of a full time Inservice Director, continuing education programs were provided for all health personnel to keep them abreast of the latest health information and techniques. In 1972 the Pharmacy was enlarged with the addition of the Laminar Flow Hood for the preparation of intravenous solutions with additives. In September a hospital and medical equipment store was set up to provide inpatients as well as outpatients with home health care equipment and supplies. Equipment is available for both sale and rent.

In the spring of 1973 the four bed Coronary Care Unit was opened bringing the total bed count to 72 beds. This unit is well equipped and the staff is constantly involved in continuing education in this specialty.

Expansion is again evident in many areas of the hospital as the health care system keeps pace with the population increase in the Valley and the changes in the health care system itself.

- New construction is under way for the enlargement of the boiler room, the operating room and the establishment of a new recovery room.
- Mobile units are being placed on the grounds of the hospital to give more space for various departmental expansion and the establishment of a Stress Lab for the assessment of cardiac patients.
- The hospital's present plant is capable of expansion to 150 beds.
- The medical staff in the Valley has increased to approximately 20, with more specialities represented.
- Staff development and continuing education has taken many routes, with more hospital personnel attending classes at the local community college, seminars and institutes at the hospital, and weekly schedules of classes.

Change and rapid progress are features indicative of the future health delivery services to the Verde Valley, and with the physical resources and the capabilities of its people, the step forward should be positive.

Acknowledgements:

Thanks must be given to the many Verde Valley residents who assisted in the acquisition of the material for this historical article. Information was also provided by the Camp Verde Historical Society, Herbert Young and his book on Jerome, and from the hospital records.

CAMP VERDE, JEROME, CLARKDALE — "Old-Time Doctors":

DR. MYRON A. CARRIER:

This well-known pioneer was the first to actively practice medicine in Jerome, arriving in 1881 even before the camp had a name. He had served in the Civil War and spent time in the Libby prison. Lacking funds for the medical training to which he aspired, he traveled by wagon train to Utah, successfully engaged in trapping, and returned to the East with the means to study for a medical degree. After practicing for a time in Michigan he came to Jerome, where he made himself part of the community by marrying Meloma Munds, daughter of William Munds. Dr. Carrier spent his last years in Camp Verde, having to leave the high altitude of Jerome because of a heart condition. He died in 1907.

Dr. Charles Winter Woods:

One of Jerome's most colorful characters, Dr. Woods lived and practiced in Jerome for a longer period than any of its other doctors. He resided there continuously from 1894 to his death in 1937 at the age of 83.

He was born in Tennessee, but spent his youth in New Orleans where he became a driver for and an aide to a doctor. He showed such adaptability that his employer encouraged him to take medical training. He did take a short course in medicine and surgery in a New York elective college.

Woods was an Octoroon and he felt he would find better acceptance away from the south. He came to Arizona. He had not yet become located when in 1892 he found work as a laborer on a freight transfer gang at Jerome Junction. When a workman had a leg crushed in an accident, Woods took charge, amputated the leg and did such a good job of it that H. J. Allen was impressed, brought the young man to Jerome and placed him in charge of the United Verde's new hospital. It was said that Allen had to use his considerable influence in Phoenix to persuade the territorial medical board to issue him a certificate to practice, but a few years later Woods was appointed to membership on the board. He remained the United Verde's chief surgeon until 1906. He then set up a private practice which he pursued in a rather desultory way. He was married to Elvia Fazell, a San Francisco opera singer, musician and orchestra conductor of French training. She survived him.

DR. L. P. KAULL:

A graduate of the Kansas City Medical College, Dr. Kaull served as assistant to Dr. Woods and Dr. Murietta, whom he followed as chief surgeon at the United Verde Hospital. He resigned in the early twenties and moved to California. He died in 1923 from the effects of a self-administered lethal drug.

Dr. Alfred J. Murietta:

He received his medical training in California and after a term of practice there came to Jerome as a replacement for Dr. Woods as chief surgeon for the United Verde Hospital. He held this position successfully for ten years, when he resigned to take up work as a specialist in his native state.

While in Jerome he purchased and operated the Red Cross Drug Store. He admitted to a probable common ancestry with the famed outlaw, Joaquin Murietta.

Dr. Arthur A. Carlson:

Dr. Carlson was a graduate of the University of California Medical School in 1910. He was a physician for work crews of the Santa Fe Railroad when it completed laying rail into Clarkdale in 1912. He then joined the medical staff of the United Verde Copper Company under Dr. Kaull. When Kaull left, Carlson replaced him as chief surgeon, a post he held until 1945 when he resigned to become chief surgeon-administrator of the Marcus J. Lawrence Memorial Hospital at Cottonwood. He resigned in 1951 to enter private practice in Phoenix.

Dr. Carlson was active in Jerome civic affairs.

He served on the City Council for three terms, one as mayor. He was the inspiration for the organization of the Verde Valley Welfare Association during the depression, the target being the underprivileged young. His medical and surgical skills were administered without charge. He died in Phoenix in 1962.

Dr. James R. Moore:

One of the best known of the Jerome physicians, Dr. Moore received his training at the Western Reserve Medical School at Cleveland and the University of Southern California Medical School at Los Angeles. In 1916 he was employed by the medical department of the Cananea Consolidated Copper Company at Sonora, Mexico, and in World War I he was a captain in the U.S. Army Medical Corps in France.

After the war he served as physician for the United Verde Extension Mining Company, then for the United Verde. He served at an American Mission Hospital in Egypt and at Muskingum College in Ohio, then returned to Jerome and the United Verde. Subsequently he was appointed superintendent of the Arizona State Hospital, then served as Medical Director for the Arizona State Industrial Commission and also of the Blue Cross and Blue Shield.

Dr. Louis E. Walsh:

The older of two brothers who practiced in Jerome, Dr. Louis Walsh was born in 1882 in Ontario, Canada. His parents were United States citizens. He received his elementary and high school education in Michigan, and when he decided to become a doctor he chose the University of Michigan Medical College in which to train. He received his degree in 1916 and shortly thereafter accepted a post on the medical staff of the United Verde hospital in Jerome.

Dr. Louis liked Jerome and its inhabitants and married Marie Sullivan the year after his arrival. They had three children. He made the Verde Valley his permanent home and remained with the copper company's medical department at Jerome and Clarkdale until his early death in 1934.

Dr. James Malcolm Walsh:

He was born in Canada in Prescott, Ontario, as was his brother Louis; he was born in 1886. After grade and high school in Michigan and college in Ontario, he attended the University of Michigan Medical College from where he graduated in 1908. He came to Jerome to enter the service of the United Verde Hospital in 1918.

Dr. Malcolm, as he was known, served a term as president of the Yavapai County Medical Society and was active in the Arizona Medical Association. In 1958 he received a plaque from the association honoring his fifty years service. He married Helen Marie Rees and they had one son, John Donald, a present resident of Jerome. Dr. Malcolm died in 1967.

Dr. E. B. Ketcherside:

Dr. Ketcherside who came to the valley in the early 1890's will be remembered for the great interest he took in the people of the valley.

Not content with ministering to their bodies alone, he also ministered to their souls; founding a church at Camp Verde and acting as its pastor during his stay. After a period of almost forty years the church bell he was instrumental in getting for his church still rings at Camp Verde.

Doctor and Mrs. Ketcherside were the parents of eleven children, ten of whom lived to maturity.

Dr. Coit I. Hughes:

The records only indicate that Dr. Hughes arrived in Camp Verde in the early 1900's and later moved to Phoenix.

Dr. B. Huff:

Dr. Huff is listed as being an Indian doctor in the early 1900's and resided in the Verde Valley.

Dr. Harry Southworth:

Dr. Southworth graduated from Rush Medical College and interned at Washington Boulevard Hospital for 18 months. He worked in Jerome from 1933 - 1938 and then went on to Prescott.

Dr. Leo Schnur:

Dr. Schnur was born in New York City in 1906 and obtained his basic medical education at the University of the State of New York, Downstate Medical Center. Post graduate in Public Health Service. He came to the Verde Valley in 1955 and practiced mainly in Sedona. He retired in 1969.

His son, Paul L. Schnur, M.D., is on the consulting staff of the hospital today.

Dr. Robert K. Hilton:

A graduate of the University of Chicago's Rush Medical College, Dr. Hilton came to the Verde Valley in 1929 as a physician for the United Verde Extension and later became attached to the United Verde medical staff. Now practicing in Litchfield Park, Arizona, he is widely known and respected as a member of the medical profession.

* * * * *

During the life of the Jerome mines other doctors served the people of Jerome. We give the names of the well-known men of medicine and surgery who practiced in Jerome during the first four decades of the century:

Doctors E. T. Cody, J. F. Coleman, J. A. Griffen, M. S. Gaede, E. J. Hart, C. C. Hedberg, E. B. Jelly, J. Ketcherside, H. W. Levengood, J. K. McDonnell, F. C. Norman, F. L. Powers, A. J. Rosenberry, Riley Shrum, R. T. Thigpen, J. W. Witten; and several whose initials are not at hand—Doctors Beardslee, Clark, Livington, Lowry, Murphy and Phillips.

COTTONWOOD: (Marcus J. Lawrence Memorial Hospital Doctors)

The following list of doctors are those who have had active or associate membership in the medical staff of the Marcus J. Lawrence Memorial Hospital 1939 - 1975.

Dr. Arthur A. Carlson:

The hospital's first surgeon-administrator. (note details above)

Dr. W. V. Edwards, Jr.:

Dr. Edwards arrived in the Verde Valley as a physician to the Phelps-Dodge Hospital Jerome. In 1946 he became one of the first three physicians in the MJLMH in Cottonwood. He practiced general medicine with emphasis on obstetrical services. On March 12, 1955 he closed his office to move in Phoenix and a position with the Arizona State Hospital. From 1952 - 1954 he represented the Verde Valley as State Representative. Today he works in industrial medicine in the Phoenix area and frequently is found at his ranch in the Verde Valley.

Dr. William Bates:

Dr. Bates arrived at the hospital in September 1948 and became one of the three initial physicians at the MJLMH. He was born in Dillon, Montana and obtained his medical education at the University of Michigan, Detroit, Michigan. Later he obtained his specialty in internal medicine from the University of Michigan Hospital. At his arrival he was the first internist north of Phoenix. In 1966 he retired and lives in California.

Dr. Kenneth B. Brilhart:

Dr. Brilhart arrived at the hospital on April 3, 1949 to become the first formally trained surgeon north of Phoenix. He was born in Roche Harbour, Washington, obtaining his basic medical education at the University of Oregon, Portland, Oregon. After this he obtained his postgraduate education in surgery at the University of Minnesota and his Masters Degree in Surgery at the Mayo Clinic at Rochester, Minnesota. He left the hospital in May 1964, later to become a medical-legal advisor to Shering Pharmaceutical Co. in New Jersey. He has recently retired due to illness.

Dr. Daniel Bright:

Dr. Bright arrived at the hospital in February 1951 and served the people in the Verde Valley as a General Practitioner with a specialty in Pediatrics and Radiology for the past 24 years. He was born in Clinton, Indiana receiving his basic medical education at the Indiana University School of Medicine, Indianapolis, Indiana. Later he studied Pediatrics and Radiology at the Wayne County General Hospital and Childrens Hospital in Detroit, Michigan.

In his 24 years of medical service, Dr. Bright has had an office in the hospital until this past year moving to a new medical building which is shared by other physicians from the area. This new building is located close to the hospital in Cottonwood.

Dr. Bright has been active in community affairs over the years being a member of the School Boards, Mayor of Clarkdale, past chief of the medical staff of the hospital, and was chosen "Man of the Year" in 1970 by the local Chamber of Commerce. Dr. Bright presently lives in Clarkdale.

Dr. Owen L. Cranmer:

Dr. Cranmer arrived at the hospital in September 1952 from Fairbanks, Alaska. He was born in Oakland, California but grew up in Seattle,

Washington. He attended the University of Oregon Medical School Obtaining his post-graduate speciality in Obstetrics and Gynecology at the Good Samaritan Hospital in Oregon and the Swedish Hospital in Seattle.

For the past 23 years Dr. Cranmer has served the people of the Verde Valley as a practitioner in general medicine but more specifically in the field of Obstetrics and Gynecology. Upon his arrival he replaced Dr. W. V. Edwards who had previously handled all obstetrical cases, leaving Dr. Cranmer the only physician for many years in the Verde Valley in this field. He is presently chief of staff of the hospital.

His office has been and still remains in the main hospital. Dr. Cranmer presently lives in Clarkdale.

Dr. E. Charles Bill:

Dr. Bill arrived at the hospital in July 1963 to become the hospital's surgeon as Dr. Brilhart was about to leave the Verde Valley. He was born in San Diego, California, obtaining his basic medical education from the Baylor University College of Medicine, Houston, Texas. His postgraduate studies were obtained at the San Joaquin General Hospital, California, in his surgical specialty.

He previously had his office in the hospital but this past year moved into the new medical building with several other local doctors.

Dr. Bill presently lives in Clarkdale.

Dr. Mark J. Westervelt:

Dr. Westervelt arrived at the hospital in 1964 to serve the community as a general practitioner. He lives in Camp Verde and has his office facility there.

He was born in Tucson, Arizona, obtaining his basic medical education from the University of California at San Francisco. His postgraduate education in general practice was obtained at the Contra Costa County Hospital, Martinez, California. He left California and came to the Verde Valley settling in Camp Verde with his family.

Dr. Marguerite S. Williams:

After a long career in the field of Internal Medicine, Dr. Williams intended to retire with her husband to the red rocks of Sedona, however, in 1966 she was back into active practice. Dr. Williams was born in Battlecreek, Michigan, obtaining her basic medical education from Loma Linda University, Loma Linda, California. Her postgraduate education in internal medicine was obtained at the Graduate School of the University of Pennsylvania. Her professional career has been very extensive, she has taught both professional and lay groups, been a member of and/or a chairman of many medical and health organizations, (such as, the American Society of Internal Medicine, Heart Association, Diabetics Association, etc.). In the early 60's she was a member of the Governor's State Committee on Aging. The Who's Who in the West has listed her since the late 50's as has the Who's Who of American Women.

Dr. Williams was instrumental in getting the first poison control center set up at the University of Arizona School of Pharmacy for the state of Arizona.

Today she has her office in her own home in Sedona and serves the people of the Verde Valley in the field of general medicine.

Dr. Richard W. Giresenbeck:

Following five years with the Indian Health Service, Dr. Griesenbeck arrived at the hospital in 1966. He was born in Schwelm Westphalia, West Germany. His basic medical education was obtained at the State University of Iowa, Iowa City, Iowa, followed by his postgraduate work in general surgery at the USPHS Hospital, Staten Island, New York.

Dr. Griesenbeck serves the people of the Verde Valley from his office in Sedona in the field of general practice.

Dr. Shahir Z. Asham:

Dr. Asham arrived at the hospital in July of 1974. He was born in Cairo, Egypt and obtained his basic medical education from the Cairo University Faculty of Medicine. He then moved tohe United States and practices at St. Josephs Hospital in Detroit, Michigan. From there he moved to the Verde Valley.

He has served the Verde Valley people in the field of anesthesiology and respiratory care.

Dr. George J. Bordenave:

Dr. Bordenave arrived at the hospital in July 1974 from Illinois. He was born in Chicago, Illinois and obtained his basic medical education from Loyola University, Stritch School of Medicine, Chicago. His surgical residency was at the Milwaukee County General Hospital. He serves the people of the Verde Valley in the field of general surgery with a speciality in hand surgery.

Dr. Bordenave lives in Cottonwood and has his office in the new medical building also located in Cottonwood.

Dr. Robert H. Jochim:

Dr. Jochim arrived at the hospital in July 1974 from Phoenix. He was born in Fairview, New Jers. His basic medical education was obtained at Loyola University, Stretch School of Medicine, Chicago, Illinois. His specialty in family practice was obtained from Loma Vista, Ventura County General Hospital, Ventura, California. From there he joined the USPHS before going to Phoenix and onto the Verde Valley.

Dr. Jochim lives in Cottonwood and has his office in the new medical building in the same town.

Dr. James E. Emmons:

Dr. Emmons arrived at the hospital in August 1974 from Linonia, Michigan. He was born in Burlington, Vermont and obtained his basic medical education from the University of Vermont Medical School, Burlington, Vermont. His specialty in Urology was obtained at the University of Michigan Medical Center.

Dr. Emmons lives in Sedona and has his office in the hospital where he provides medical services chiefly in urology.

Dr. Juneau D. Stump, Jr.:

Dr. Stump arrived at the hospital in September 1974 from Tucson. He was born in Phoenix, Arizona and obtained his basic medical education at the Universidad Autonoma de Guadalajaro, Facutad de Medicina, Guadalajara, Jalisco, Mexico. His postgraduate studies in surgery were obtained at the University of Arizona, Tucson.

Dr. Stump's office is located in Bridgeport, Gray's Building, where he serves the people in the Verde Valley in the field of general practice. He lives in Cottonwood.

Dr. Joel E. Futral:

Dr. Futral arrived at the hospital in March 1975 bringing to the Valley a specialty in internal medicine and cardiology. He has become the director of the Coronary Care Unit of the hospital. He was born in Atlanta, Georgia. His basic medical education was obtained at the Bowman Gray School of Medicine, Georgia, and his speciality of general medicine from the University of Oklahoma Medical Center, and cardiology from the St. Joseph's Hospital Medical Center, Phoenix, Arizona. Prior to his arrival in the Verde Valley he was at the Arizona Heart Institute, Phoenix.

His office and Cardiac Stress Lab are located in the hospital. He lives in Clarkdale.

Dr. John R. Coy:

Dr. Coy arrived at the hospital in September 1974 to serve as Chief Radiologist. He was born in Memphis, Tennessee and obtained his basic medical education at the University of Tennessee, Memphis, Tennessee. His specialty in radiology was obtained at St. Josephs Hospital, Phoenix, Arizona.

Dr. Coy commutes from Phoenix to the Verde Valley to provide these radiology services.

Dr. Denis J. Winder:

Dr. Winder arrived at the hospital in May 1975 to serve the people of the Verde Valley in the field of general surgery and general medicine. He was born in Chicago, Illinois and obtained his basic medical education from Ohio State University, Columbus, Ohio. He has had several postgraduate field of study: radiology from Akron City Hospital, Akron, Ohio; general surgery from Akron City Hospital and William Beaumont Hospital, Royal Oak, Michigan; and plastic surgery from Wayne University, Detroit, Michigan. From Michigan he moved to the Verde Valley.

Dr. Winder's office and residence is in Sedona.

Dr. Bernard R. Eisenfeld:

Dr. Eisenfeld, radiologist, arrived at the hospital in June 1975. He was born in Newark, New jersey and received his basic medical education from the Newark College of Medicine. He commutes from Phoenix to the Verde Valley to provide these radiological services to the hospital.

Dr. William M. Steele

Dr. Steele, orthopedic surgeon, arrived at the hospital in July 1975. He was born in Newark, New Jersey and received his basic medical education from the Newark College of Medicine. He commutes from Phoenix to the Verde Valley to provide these radiological services to the hospital.

Dr. William M. Steele:

Dr. Steele, orthopedic surgeon, arrived at the hospital in July 1975. He was born in Detroit, Michigan and obtained his basic medical education from the Wayne State University College of Medicine, Detroit, Michigan. His specialty in orthpedic surgery was obtained at Northwestern University in Chicago. He did orthopedic work during his two years in the Korean War. Following this he spent 3 years in Traverse City,

Michigan and 15 years in Phoenix. From Phoenix he came to the Verde Valley.

Dr. Steele has his residence and one office in Sedona and another office in the new medical building in Cottonwood.

Dr. Thadeus L. Jarkowski:

Dr. Jarkowski is the latest member to join the medical staff. He is the hospital pathologist and arrived at the hospital in August 1975. He commutes from Phoenix and is a member of the Affiliated Pathologists Lab, Phoenix.

During the years other doctors have come and gone through the hospital corridors. Their names have been listed below:

1945 - 1955 **Phelps-Dodge Doctors**
Dr. Ray Chester
Dr. William W. McKinley

Others:
Dr. R. G. Jackson

1955 - 1965
Dr. Ora M. Williamson — Arrived 1959, Left ?
Dr. George E. Bock — Arrived 1960, Left 1962
Dr. Donald J. McCaughey — Arrived 1964, Left 1964

1965 - 1975
Dr. Floyd D. Simpson — Arrived 1973, Left 1974
Dr. Ian C. Cree — Arrived 1974, Left 1975

SPECIAL MENTION

Dr. Phil H. Loveless:

Although Dr. Loveless is on the courtesy staff of the hospital special mention must be given to the 25 years of service that this doctor has given to the people of the Verde Valley in the field of ophthalmology. He was born in Shirley, Idiana and obtained his basic medical education from the Indiana University. His specialty in ophthalmology was obtained from the same university.

Future Medical Meetings

CONTINUING MEOICAL EOUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEOICAL EOUCATION.

ARIZONA STATE HOSPITAL, PHOENIX
GOOD SAMARITAN HOSPITAL, PHOENIX
PHOENIX INOIAN MEOICAL CENTER
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEOICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEOICAL EOUCATION PROGRAM, TUCSON
VETERANS AOMINISTRATION CENTER, PRESCOTT

CONTINUING MEOICAL EDUCATION ACTIVITIES SPONSOREO BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARO.

COCONINO COUNTY MEDICAL SOCIETY

Summer Education Seminar
July 24 and 25, 1976
Little America
Flagstaff, AZ

SPONSOR: Coconino County Medical Society

CONTACT:
C. H. Fredell, M.D.
120 West Fine
Flagstaff, AZ 86001

Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

PHYSICIAN TRAINING PROGRAM

October 1, 1975 - June 30, 1976
Tucson Medical Center, Tucson, AZ

SPONSOR: Arthritis Services Program

CONTACT:
Beth Ziebell, Prog. Dir.
3813 E. 2nd St.
Tucson, AZ 85716

Approved for 30 required hours toward the ArMA Certificate in Continuing Medical Education.

STAFF EDUCATION CONFERENCE

Wednesdays, Weekly, 1 p.m.
Arizona State Hospital, Phoenix, AZ

SPONSOR: Arizona State Hospital

CONTACT:
Howard E. Wulsin, M.D.
Arizona State Hospital
2500 E. Van Buren
Phoenix, AZ 85008

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wednesday, September - May
4:00 p.m. to 5:30 p.m.
Arizona Medical Center, Tucson, AZ, Rm. 8403

SPONSOR: Department of Psychiatry, U of A College of Medicine

CONTACT:
Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ per session toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month
Plaza International, Tucson, AZ

SPONSOR: U of A Medical Center, Dept. of Radiology

CONTACT: Irwin M. Freundlich, M.D.
Arizona Medical Center
Dept. of Radiology
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital and Health Center,

SPONSOR: Depts. of Medicine, Surgery, Radiology, Pathology and Family Practice.

CONTACT:
Richard Silver, M.D.
Chairman, Medical Education
and Library Committee
Century Medical Plaza, Suite 160
1701 West St. Mary's Road
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

TUMOR BOARD CONFERENCE

Every Friday at Noon

Kiva Conference Room
Phoenix Memorial Hospital

SPONSOR: Phoenix Memorial Hospital

CONTACT:
Howard Kimball, M.D.
333 West Thomas Road
Phoenix, AZ 85013

Approved for credit toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEDICAL EDUCATION SEMINAR

Third Monday of the Month

Kiva Conference Room
Phoenix Memorial Hospital

SPONSOR: Medical Staff of Memorial Hospital

CONTACT:

George Scharf, M.D.
1201 South 7th Avenue
Phoenix, AZ 85007

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

PULMONARY DISEASE GRAND ROUNDS

Mondays — 12 Noon

D-5 North Conference Rm., Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Pulmonary Disease Teaching Service
Good Samaritan Hospital

CONTACT:
Bernard E. Levine, M.D.
Pulmonary Function Laboratory
Good Samaritan Hospital
1033 E. McDowell Hospital
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURGICAL GRAND ROUNDS
4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave.
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St. Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

Directory

THE ARIZONA MEDICAL ASSOCIATION, INC., ORGANIZED 1892, 810 W. BETHANY HOME ROAD, PHOENIX, ARIZONA 85013.

OFFICERS AND DIRECTORS — 1976-77

President—Edward Sattenspiel, M.D. 333 W. Thomas Rd., Phoenix 85013
President-Elect—John F. Kahle, M.D. 715N. Beaver, Flagstaff 86001
Vice President—Richard L. Dexter, M.D. P.O. Box 26926, Tucson 85726
Secretary—William E. Crisp, M.D. 926 E. McDowell Rd., Phoenix 85006
Treasurer—John T. Clymer, M.D. 705 N. Country Club, Tucson 85716
Past President—William C. Scott, M.D. U of A, Dept. of OB-GYN, Tucson 85724
Editor-in-Chief—John W. Kennedy, M.D. 705 E. Tuckey Lane, Phoenix 85011
Delegate to AMA—Seymour I. Shapiro, M.D. 5402 E. Grant Rd., Tucson 85712
Delegate to AMA—Richard Flynn, M.D. 2210 S. Mill Ave., Tempe, 85281
Delegate to AMA—W. Scott Chisholm, Jr. 1158 E. Missouri Ave., Phoenix 85014
Alt. Delegate to AMA—Arthur V. Dudley, Jr. 1606 N. Tucson Blvd., Tucson 85716
Alt. Delegate to AMA—Bruce N. Curtis, M.D. 618 N. Central Ave., Safford 85546
Alt. Delegate to AMA—Patrick P. Moraca, M.D. 217 E. Virginia, Phoenix 85013

DISTRICT DIRECTORS

Central—James M. Hurley, M.D. 3143 N. 32nd St., Phoenix 85018
Central—Wilfred M. Potter, M.D. 3604 Wells Fargo, Scottsdale, 85251
Central—Wallace A. Reed, M.D. 1040 E. McDowell Rd., Phoenix 85006
Central—Lawrence J. Shapiro, M.D. 550 W. Thomas Rd., Phoenix 85013
Central—R. Jack M. Zeluff, M.D. 217 E. Virginia, Phoenix 85004
Northeaster—Jack I. Mowrey, M.D. P.O. Box 887, Lakeside 85929
Northwester—Albert Rosenblatt, M.D. 412 E. Oak Street, Kingman, 86401
Southwestern—Edward R. Curtis, M.D. 503 5th Ave., Safford 85546
Souther—Richard S. Armstrong, M.D. P.O. Box 12787, Tucson 85732
Southern—Vernor F. Lovett, M.D. 5402 E. Grant Rd., Tucson 85712
Southern—Robert P. Purpura, M.D. 601 N. Wilmot Rd., Tucson 85711
Southwestern—James F. Martin, M.D. 1150 W. 24th St., Yuma 85364

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

President—Fernando de al Cueva, M.D. Pavo-135-306, Guadalajara, Jal. Mexico
President-Elect—Thomas H. Taber, Jr., M.D. 333 E. Virginia, Suite No. 212, Phoenix, AZ 85012
Vice-President—Pedro Gortazar Hijar, M.D. Guadalajara, Jal. Mexico
Secretary-USA—Schuyler V. Hilts, M.D. Tucson Medical Center, P.O. Box 6607, Tucson, AZ 85716
Secretary-Mexico—Felix Torres Herrera, M.D. Guadalajara, Jal. Mexico
Treasurer-USA—Lucy A. Vernetti, M.D. 333 W. Thomas Rd., Ste. 207, Phoenix, AZ 85013
Treasurer-Mexico—Franco Leopoldo C. Guadalajara, Jal. Mexico
Executive Secy.—USA—Mrs. Virginia E. Bryant 333 W. Thomas Rd., Ste. 207, Phoenix, AZ 85013
Executive Secy.—Mexico—Dr. Alfredo Patron Mazatlan, Sinoala, Mexico

COMMITTEES — 1976-77

ARTICLES OF INCORPORATION AND BYLAWS: Charles E. Henderson, M.D., Chairman (Phoenix); Philip E. Dew, M.D., (Tucson); Paul B. Jarrett, M.D. (Phoenix); William C. Scott, M.D., (Tucson); Clarence E. Yount, M.D. (Prescott).

BENEVOLENT AND LOAN FUND: Arthur V. Dudley, M.D., Chairman, (Tucson); John Clymer, M.D., (Tucson); Daniel C. DeBoer, M.D., (Tucson); William Farr, M.D., (Tucson); R. Lee Foster, M.D., (Phoenix); Andrew M. Goldner, Ph.D., (Tucson); Edward J. Lefeber, M.D., (Mesa); Cecil C. Vaughn, Jr., M.D., (Phoenix); Karl E. Voldeng, M.D., (Phoenix).

FINANCE COMMITTEE: John T. Clymer, M.D., Chairman, (Tucson); Robert E. Crawford, M.D. (Phoenix); Richard L. Dexter, M.D., (Tucson); Herbert G. Erhart, Jr., M.D., (Springerville); John R. Green, M.D. (Phoenix); James L. Grobe, M.D., (Phoenix); R. T. McDonald, M.D., (Flagstaff); Theodore L. Mohley, M.D., (Phoenix); Robert P. Purpura, M.D., (Tucson); Otto Shill, Jr., M.D., (Tempe); Seymour I. Shapiro, M.D., (Tucson); George Wallace, M.D., (Scottsdale); George Yard, M.D., (Flagstaff).

GOVERNMENTAL SERVICES: Wallace A. Reed, M.D., Chairman, (Phoenix); John A. Ash, M.D. (Phoenix); Allan Beigel, M.D., (Tucson); Donn G. Duncan, M.D., (Tucson); Walter R. Eichei, M.D., (Chandler); Alan Engelbert, M.D., (Tucson); Lloyd S. Epstein, M.D., (Tucson); Charles Kahl, M.D., (Phoenix); Louis C. Kossuth, M.D., (Phoenix); Joseph J. Likos, M.D., (Phoenix); Joseph L. Marcarelli, M.D., (Sun City); Dermont W. Melick, M.D., (Tucson); Arthur D. Nelson, M.D., (Scottsdale); Helen M. Roberts, M.D., (Phoenix); Marvin C. Schneider, M.D., (Tucson).

GRIEVANCE COMMITTEE: William C. Scott, M.D., Chairman, (Tucson); Richard W. Abbuhl, M.D., (Phoenix); Walter Brazie, M.D., (Kingman); Philip E. Dew, M.D., (Tucson); Richard E. H. Dunsberg, M.D., (Phoenix); David E. Glow, M.D., (Sierra Vista); John B. Jasmison, M.D., (Flagstaff); Phillip W. Kantor, M.D., (Phoenix); R. T. McDonald, M.D., (Flagstaff); Albert J. Ochsner, M.D., (Yuma); Robert P. Purpura, M.D., (Tucson).

HEALTH MANPOWER COMMITTEE: Louis C. Kossuth, M.D., Chairman, (Phoenix); Casey D. Blitt, M.D., (Tucson); Bruce N. Curtis, M.D., (Safford); John J. Kelley, M.D., (Phoenix); Alexander Kelter, M.D., (Tucson); Edward J. Lefeber, M.D., (Phoenix); Roger A. Lueck, M.D., (Phoenix); Marcus M. Marble, M.D., (Buckeye); Dermont W. Melcik, M.D., (Tucson); John B. Miller, M.D., (Phoenix); Andrew W. Nichols, M.D., (Tucson); James S. Pucelik, M.D., (Yuma); Robert St. John, M.D., (Phoenix); H. Stephens Thomas, M.D., (Phoenix); Kevin E. Ware, D.O., (Benson); Herbert L. Winograd, M.D., (Phoenix).

HISTORY AND OBITUARIES: John W. Kennedy, M.D., Chairman (Phoenix); Francis J. Bean, M.D., (Tucson); Walter Brazie, M.D., (Kingman); C. Bland Giddings, M.D., (Mesa); John R. Green, M.D., (Phoenix); Abe I. Podolsky, M.D., (Yuma); Jay L. Sitterley, M.D., (Flagstaff).

LEGISLATIVE: Selma Targovnik, M.D., Chairperson, (Phoenix); Richard W. Abbuhl, M.D., (Phoenix); Harrison G. Butler, II, M.D., (Phoenix) W. Scott Chisholm, M.D., (Phoenix); Sam Colachis, Jr., M.D., (Phoenix); Richard L. Collins, M.D., (Scottsdale); Michael R. Geyser, M.D., (Mesa); Donald F. Griess, M.D., (Tucson); John P. Holbrook, M.D., (Tucson); Gerald Marshall, M.D., (Phoenix); Richard McGill, D.O., (Phoenix); Gerald F. McNally, M.D., (Prescott); Donald R. Miles, M.D., (Phoenix); R. Michael O'Harra, M.D., (Phoenix); Ratibor Pantovich, D.O., (Phoenix); O. Melvin Philips, M.D., (Scottsdale); Wilfred M. Potter, M.D., (Scottsdale); Paul Schnur, M.D., (Tucson); Berton Siegel, D.O. (Phoenix); Jerome H. Targovnik, M.D., (Phoenix); John Vosskuhler, M.D., (Flagstaff); Dennis Weiland, M.D., (Scottsdale).

MATERNAL AND CHILD HEALTH CARE: William C. Scott, M.D., Chairman (Tucson); Frederic W. Baum, M.D., (Tempe); James F. Blute, III, M.D., (Tucson); Norman B. Brown, M.D., (Phoenix); Walter B. Cherry, M.D., (Phoenix); C. Donald Christian, M.D., (Tucson); Warren A. Colton, Jr., M.D., (Tempe); William J. R. Daily, M.D., (Phoenix); Jack H. Demlow, M.D., (Tucson); Glenn M. Friedman, M.D., (Scottsdale); Harlan R. Giles, M.D., (Tucson); Raymond J. Jennett, M.D., (Phoenix); Edward Kilgore, M.D., (Phoenix); Walter K. Lippard III, M.D., (Phoenix); Belton P. Meyer, M.D., (Phoenix); Sister Alice Montgomery, (Phoenix); William J. Moore, M.D., (Phoenix); William G. Payne, M.D., (Phoenix); David Pent, M.D., (Phoenix); Hermann S. Rhu, Jr., M.D., (Tucson); Paul A. Whitmore, D.O., (Phoenix).

MEDICAL ECONOMICS: Robert P. Purpura, M.D., Chairman, (Tucson); Richard S. Armstrong, M.D., (Tucson); Albert C. Asendorf, M.D., (Phoenix); Chester G. Bennett, M.D., (Phoenix); Avi Ben-Ora, M.D., (Scottsdale); Sam C. Colachis, Jr., M.D., (Phoenix); Charles E. Dalton, M.D., (Phoenix); George L. Hoffmann, M.D., (Mesa); Frederick W. Jensen, M.D., (Phoenix); John F. Kahle, M.D., (Flagstaff); Howard N. Kandell, M.D., (Phoenix); Patrick P. Moraca, M.D., (Phoenix); Richard W. Switzer, M.D., (Tucson); Martin L. Weich, M.D., (Tucson); Burton E. Weissman, M.D., (Phoenix); Reginald J.M. Zeluff, M.D., (Phoenix).

MEDICAL EDUCATION: Robert E. T. Stark, M.D., Chairman, (Phoenix); James E. Brady, M.D., (Tucson); Daniel B. Carroll, M.D., (Phoenix); Melvin I. Cohen, M.D., (Phoenix); George D. Comeri, M.D., (Tucson); David J. Crosby, M.D., (Phoenix); Kenneth A. Dregseth, M.D., (Sierra Vista); Francis T. Flood, M.D., (Phoenix); Harry W. Hale, Jr., M.D., (Phoenix); Robert E. Hastings, M.D., (Tucson); John W. Heaton, M.D., (Phoenix); M. Wayne Heine, M.D., (Tucson); Howard N. Kandell, M.D., (Phoenix); Jack M. Layton, M.D., (Tucson); Albert Rizzoli, M.D., (Tucson); William F. Sheeley, M.D., (Phoenix); John J. Standifer, M.D., (Kingman); Lawrence Z. Stern, M.D., (Tucson); David C. H. Sun, M.D., (Phoenix); Ashton B. Taylor, M.D., (Phoenix); Charles A. Trahern, M.D., (Prescott); Albert G. Wagner, M.D., (Phoenix).

OCCUPATIONAL HEALTH: Joseph M. Hughes, M.D., Chairman (Phoenix); Floyd K. Berk, M.D., (Tucson); Richard Besserman, M.D., (Phoenix); Earl M. Best, M.D., (Phoenix); Sheldon Davidson, M.D., (Phoenix); Walter V. Edwards, M.D., (Phoenix); Eugene C. Gibbs, M.D., (Superior); Robert B. Leonard, M.D., (Phoenix); Charles H. Nelson, M.D., (Tucson); Florian R. Rabe, M.D., (Scottsdale); Eugene J. Ryan, M.D., (Scottsdale); Mauer Tuchler, M.D., (Phoenix); Willis A. Warner, M.D., (Phoenix).

MEMBERS ARE URGED TO BRING MATTERS ON INTEREST AND CONCERN TO THE CHAIRMEN OF THE APPROPRIATE COMMITTEE OR TO THE ATTENTION OF ANY MEMBER OF THE BOARD OF DIRECTORS.

AN INVOLVED MEMBERSHIP IS THE BASIS FOR AN EFFECTIVE ASSOCIATION.

PHYSICIAN REHABILITATION: Richard E. H. Duisberg, M.D., Chairman (Phoenix); Otto L. Bendheim, M.D., (Phoenix); William E. Bishop, M.D., (Globe); John T. Clymer, M.D., (Tucson); Everett W. Czerny, M.D., (Tucson); Donald L. Damstra, M.D., (Phoenix); Wesley E. Green, M.D., (Flagstaff); Laurence M. Linkner, M.D., (Phoenix); Stephen C. Scheiber, M.D., (Tucson); Walter B. Tomlinson, M.D., (Fort Huachuca); Karl E. Voldeng, M.D., (Phoenix); Eleanor A. Waskow, M.D., (Phoenix).

PROFESSIONAL COMMITTEE: Joseph W. Hanss, Jr., M.D., Chairman (Phoenix); Paul M. Bindelgas, M.D., (Phoenix); Paul B. Borgeson, M.D., (Phoenix); John A. Bruner, M.D., (Phoenix); L. Philip Carter, M.D., (Phoenix); Alan L. Gordon, M.D., (Phoenix); James L. Grobe, M.D., (Phoenix); James M. Hurley, M.D., (Phoenix); Helen Johnson, M.D., (Tucson); James G. Lawson, M.D., (Phoenix); Laurence M. Linkner, M.D., (Phoenix); Joseph Reno, M.D., (Flagstaff); Donald F. Schaller, M.D., (Phoenix); George A. Spendlove, M.D., (Phoenix); Neil O. Ward, M.D., (Phoenix).

PUBLIC RELATIONS: Charles H. Finney, M.D., Chairman, (Phoenix); W. David Ben-Asher, M.D., (Tucson); James R. Callison, M.D., (Phoenix); William G. Chaffee, M.D., (Phoenix); Ronald L. Christ, M.D., (Yuma); Julien DeVries, (Phoenix); Theodore G. Dodenhoff, M.D., (Phoenix); Merlin K. DuVal, M.D., (Tucson); Ira B. Ehrlich, M.D., (Phoenix); Edward B Grothaus, M.D., (Sierra Vista); Gennaro G. Licosati, M.D., (Phoenix); Mrs. Nikki Mertz, (Phoenix); Morton S. Thomas, M.D., (Wickenberg); Alan Yudell, M.D., (Phoenix).

PUBLISHING COMMITTEE: John W. Kennedy, M.D., Chairman, (Phoenix); Walter V. Edwards, M.D., (Phoenix); Warren F. Gorman, M.D., (Scottsdale); Gerald Kaplan, M.D., (Phoenix); George Lastnick, M.D., (Sun City); William B. McGrath, M.D., (Phoenix); Stanley H. Nordmo, M.D., (Phoenix); Michael M. Shreiber, M.D., (Tucson); Murray Spotnitz, M.D., (Phoenix); Donald J. Ziehm, M.D., (Phoenix).

SCIENTIFIC ASSEMBLY: Louis S. Tan, M.D. (Phoenix); Merrill M. Abeshaus, M.D., (Flagstaff); Suresh C. Anand, M.D., (Phoenix); Floyd K. Berk, M.D., (Tucson); Thomas E. Bittker, M.D., (Phoenix); W. Scott Chisholm, M.D., (Phoenix); George D. Comerci, M.D., (Tucson); Boyden L. Crouch, M.D., (Phoenix); Otto Gambacorta, M.D., (Tucson); Jerome Gerendasy, M.D., (Mesa); Laurence M. Haas, M.D., (Tucson); Timothy R. Harrington, M.D., (Phoenix); Clifford J. Harris, Jr., (Tucson); Thomas S. hartley, M.D., (Phoenix); Thomas S. Henry, M.D., (Flagstaff); Stuart I. Holtzman, M.D., (Phoenix); Thomas S. Hartley, M.D., (Phoenix); Wayne M. Heine, M.D., (Tucson); Thomas S. Henry, M.D., (Flagstaff); Stuart I. Holtzman, M.D., (Tucson); Efren N. Hufana, M.D., (Glendale); James M. Hurley, M.D., (Phoenix); Norman N. Komar, M.D., (Tucson); Eugene Leibsohn, M.D., (Phoenix); Philip Levy, M.D., (Phoenix); Peter Mao, M.D., (Phoenix); William S. Nevin, M.D., (Tucson); Neopito Robles, M.D., (Tucson); Marvin C. Schneider, M.D., (Phoenix); Richard A. Silver, M.D., (Tucson); Donald P. Speer, M.D., (Tucson); Wilbur C. Voss, M.D., (Tucson); Donald J. Ziehm, M.D., (Phoenix).

COUNTY MEDICAL SOCIETY OFFICERS, 1975-76

APACHE: Daniel L. Neel, M.D., President, P.O. Box 887, Lakeside, 85929; Robert D. Martin, M.D., Secy., Prof. Plaza Bldg., Pinetop, 85935.

COCHISE: John C. Conroy, M.D., President, Copper Queen Hospital, Bisbee, 85603; Pedro Mora, M.D., Secy., 702 Yuma Trail, Bisbee, 85603.

COCONINO: John B. Jamison, M.D., President, 1355 N. Beaver, Flagstaff, 86001; Joseph H. Reno, M.D., Secy. P.O. Box 310, Flagstaff, 86001.

GILA: Bert Lambrecht, M.D., President, Box 777, Miami, 85539; David B. Gilbert, M.D., Secy., P.O. Box 1030, Payson, 85541.

GRAHAM: Dennis Hess, M.D., President, 503 5th Ave., Safford, 85546; Laurence R. Mansur, M.D., Secy.. 2016 W. 16th St., Safford, 85546.

GREENLEE: Lyle H. Boyea, M.D., President, Morenci Hospital, Morenci, 85540; Roberto A. Dinglasan, M.D., Secy., Morenci Hospital, 85540.

MARICOPA: Walter R. Eicher, M.D., President; Max L. Wertz, M.D., Secy. (Society address: 2025 N. Central Ave., Phoenix, 85004).

MOHAVE: Joseph McAndrew, M.D., President, P.O. Box 1916, Lake Havasu City, 86403; Earl S. Gilbert, M.D., Secy., Mohave Gen. Hospital, 86401.
Gen. Hospital, 86401.

NAVAJO: Robert J. Haley, III, M.D., President, P.O. Box 700, Holbrook, 86025; Harry Beckwith, M.D., Secy. East 2nd & Colorado Ave., Winslow, 86047.

PIMA: James L. Parsons, M.D., President; Stuart W. Westfall, M.D., Secy. (Society address: 2655 East Adams St., Tucson 85716).

PINAL: Paul A. Rosborough, M.D., President, 1195 N. Arizona Blvd., Coolidge 85228; Howard Hyde, M.D., Secy., 1023 E. Florence Blvd., Casa Grande, AZ 85222.

SANTA CRUZ: J. S. Gonzalez, M.D., President, P.O. Box 1209, Nogales, 85621; Charles S. Smith, M.D., Secy. Box 1382, Nogales, 85621.

YAVAPAI: David C. Duncan, M.D., President, 801 Miller Valley Rd., Prescott, 86301; John J. Houston, M.D., Secy. 542 N. Hassayampa Dr., Prescott, 86301.

YUMA: Dirk Frauenfelder, M.D., President, 2244 S. Avenue A., Yuma 85364; Elwood L. Schmidt, M.D., Secy., 1812 8th Ave., Yuma 85364.

ARIZONA MEDICAL ASSOCIATION AUXILIARY

PRESIDENT Mrs. George E. Hoffmann (Julie)
540 Mesa Vista Lane, Mesa 85203
PRESIDENT-ELECT Mrs. Joseph Reno (Maude)
621 West Beal Road, Flagstaff 86001
1ST VICE PRESIDENT Mrs. James Parsons (Carolyn)
3161 N. Pantano Rd., Rt. 2 Box 243-E, Tucson 85715
2ND VICE PRESIDENT Mrs. Richard Dahlen (Thelma)
3210 East Via Palos Verdes, Tucson 85716
RECORDING SECY Mrs. Eugene S. Rounseville (Aileen)
3240 Hualapai, Kingman 84601
TREASURER Mrs. Robert E. Hancock (Elvera)
1004 W. Palo Verde Dr., Phoenix 85013
DIRECTOR 1976-1978 Mrs. Carl Shrader (Ginny)
1615 N. Aztec, Flagstaff 86001
DIRECTOR 1976-1977 Mrs. Howard Kimball (Ella)
414 W. Northview, Phoenix 85021
DIRECTOR 1975-1977 Mrs. Albert Wagner (Helen)
3216 E. Meadowbrook, Phoenix 85018
CHAPLAIN Mrs. Robert M. Mattson (Rillie Lee)
6302 Sage Dr. E., Scottsdale 85253
CORRESP SECY Mrs. Charles McCorkle (Carolyn)
1427 E. Bayview, Tempe 85283
HISTORIAN Mrs. Melvin Phillips (Jean)
1001 Norris Rd., Prescott, 86301

STANDING AND SPECIAL COMMITTEES

AMA-ERF Mrs. J. R. McAndrew (Cathy)
2410 Wood Lane, Box 1916, Lake Havasu 86403
BYLAWS, PROCEDURES & GUIDELINES Mrs. Paul Jarrett (Beverly)
501 E. Pasadena, Phoenix 85012
COMMUNICATIONS Mrs. Lynn Newman (Joyce)
4531 W. Seldon Lane, Glendale 85302
CAUDCEUS CRIER EDITOR Mrs. Charles I. Fisher (Peggy)
352 W. Berridge Lane, Phoenix 85013
COMMUNITY HEALTH Mrs. Luiz Lisboa (Janice)
3827 N. 28th St., Phoenix 85016
CONVENTION Mrs. Richard L. Collins (Mary Lee)
7422 E. Berridge Lane, Scottsdale 85253
FAMILY HEALTH Mrs. Ronald Christ (Carol)
1402 Gateway Ave., Yuma 85361
FINANCE Mrs. Max L. Wertz (Diane)
5600 N. Palo Christi Rd., Paradise Valley 85253
GEMS Mrs. Kirk Stetson (Bunnie)
3485 W. Ramer, Flagstaff 86001
HAMER EDUCATION LOAN FUND Mrs. William Bishop (Marian)
211 W. 3rd, Globe 85501
HEALTH MANPOWER & EDUCATION Mrs. Luis Tan (Mary Jo)
3510 E. Nita Rd., Paradise Valley 85253
HOSTESS Mrs. John Ash (Agnes)
5818 N. 3rd Ave., Phoenix 85013
INTERNATIONAL HEALTH Mrs. J. O. Soderstrom (Juanita)
805 Prescott Heights Dr., Prescott 86301
LEGISLATION Mrs. John Clymer (Eloise)
7090 North Creolo Place, Tucson 85704
REPORTS Mrs. Robert Cannell (Leslie)
908 Palmcroft Dr., Yuma 85364

IRA

INDIVIDUAL RETIREMENT ACCOUNT

A new law now permits doctors and other self-employed persons to save up to $1,500 per year in their own individual retirement income account. The amount you save is *fully tax deductible* and there is *no tax on interest accumulation.*

A life insurance annuity is a sensible way for you to fund your own retirement account, because it provides *guaranteed* values and competitive interest rates.

HBA Life is a Best Recommended Arizona Life and Health Company. We have shared interest with the Arizona Medical Profession since our founding in 1944.

Let us assist you in providing for your protection and retirement income needs. Call or write us. We will prescribe what's best for your retirement program!

THE HBA LIFE INSURANCE COMPANY

1337 N. FIRST ST. (P.O. BOX 1272), PHOENIX, AZ 85001 (602) 258-4885

New from Lilly/Dista Research

NALFON®
fenoprofen calcium
300-mg.* Pulvules®

DISTA

Dista Products Company
Division of Eli Lilly and Company
Indianapolis, Indiana 46206

Additional information available to the profession on request.

*Present as 345.9 mg. of the calcium salt of fenoprofen dihydrate equivalent to 300 mg. fenoprofen.

600091



THESE SHINGLES MAKE A GREAT BUILDING

Camelback Professional Building
5051 N. 34th STREET
PHOENIX, ARIZONA 85018
(602) 955-6200

general psychiatry / child psychiatry / psychoanalysis, clinical psychology / and family counseling.



MOORISH DOMES AND MINARETS OF MALAYSIA

Kuala Lumpur is distinguished for its graceful, Moorish-style architecture. The capital city of Malaysia also has picturesque streets of thatched Kampong-houses on stilts. Nearby are fascinating rubber plantations and the Hindu Shrine in the Batu Caves. The idyllic island of Penang is surrounded with quiet sandy beaches and groves of softly swaying coconut palms.

Kuala Lumpur and the island of Penang are part of an exotic optional excursion on your Arizona Medical Association Far East Adventure. Don't miss this once-in-a-lifetime holiday. Send your deposit now.







Arizona Medical Association
Invites You on a

Far East Adventure

To Singapore, Bali and Hong Kong

Depart Phoenix September 7, 1976—Return September 22, 1976

Join us for a two-week, relaxing, do-as-you-please holiday in the Far East. Enjoy deluxe hotels and fine restaurants. See spectacular harbors, towering volcanoes, lush tropical birds and flowers, graceful dancers, intricately carved temples and tempting buys in jade, pearls, silk, cameras, carvings and hand-made clothing.

A Great Value $1498

It all awaits you. A deluxe trip with direct flight convenience at charter cost savings. Don't miss it. Send your deposit today.

Send To: **Arizona Medical Association**
810 W. Bethany Home Rd.
Phoenix, Arizona 85013

Enclosed is my check for $ 1498 ($100 per person) as deposit.

NAMES _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

Another Non-Regimented INTRAV Deluxe Adventure

Medical Center X-Ray and Clinical Laboratory

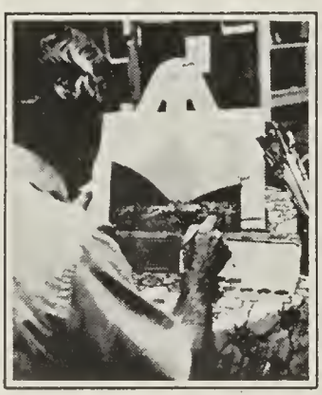
1313 North 2nd Street
Phoenix, Arizona
Phone 258-3484

CLINICAL PATHOLOGY
DIAGNOSTIC X-RAY
PORTABLE X-RAY AND E.K.G. SERVICE
ELECTROCARDIOGRAPHY

R. Lee Foster, M.D., F.A.C.R., F.A.C.P., Director

Diplomates of American Board of Radiology

George B. Kent, Jr., M.D., Consultant Pathologist



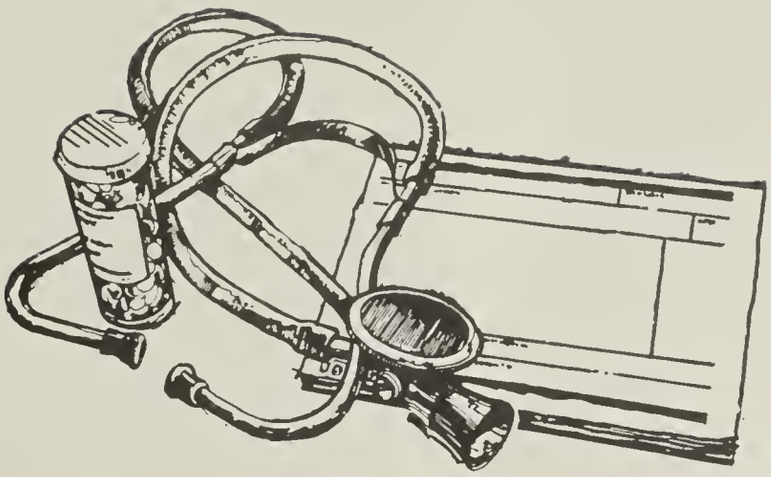



a structured program for the patient.

Every detail for the patient's well-being is carefully planned and evaluated in conjunction with his personal physician

CH
camelback hospital
5055 north thirty-fourth street
phoenix, arizona 85018

A NON-PROFIT COMMUNITY PSYCHIATRIC HOSPITAL



PHYSICIAN . . . YOUR GENERAL PRACTICE COULDN'T BE MORE GENERAL . . . IN THE AIR FORCE.

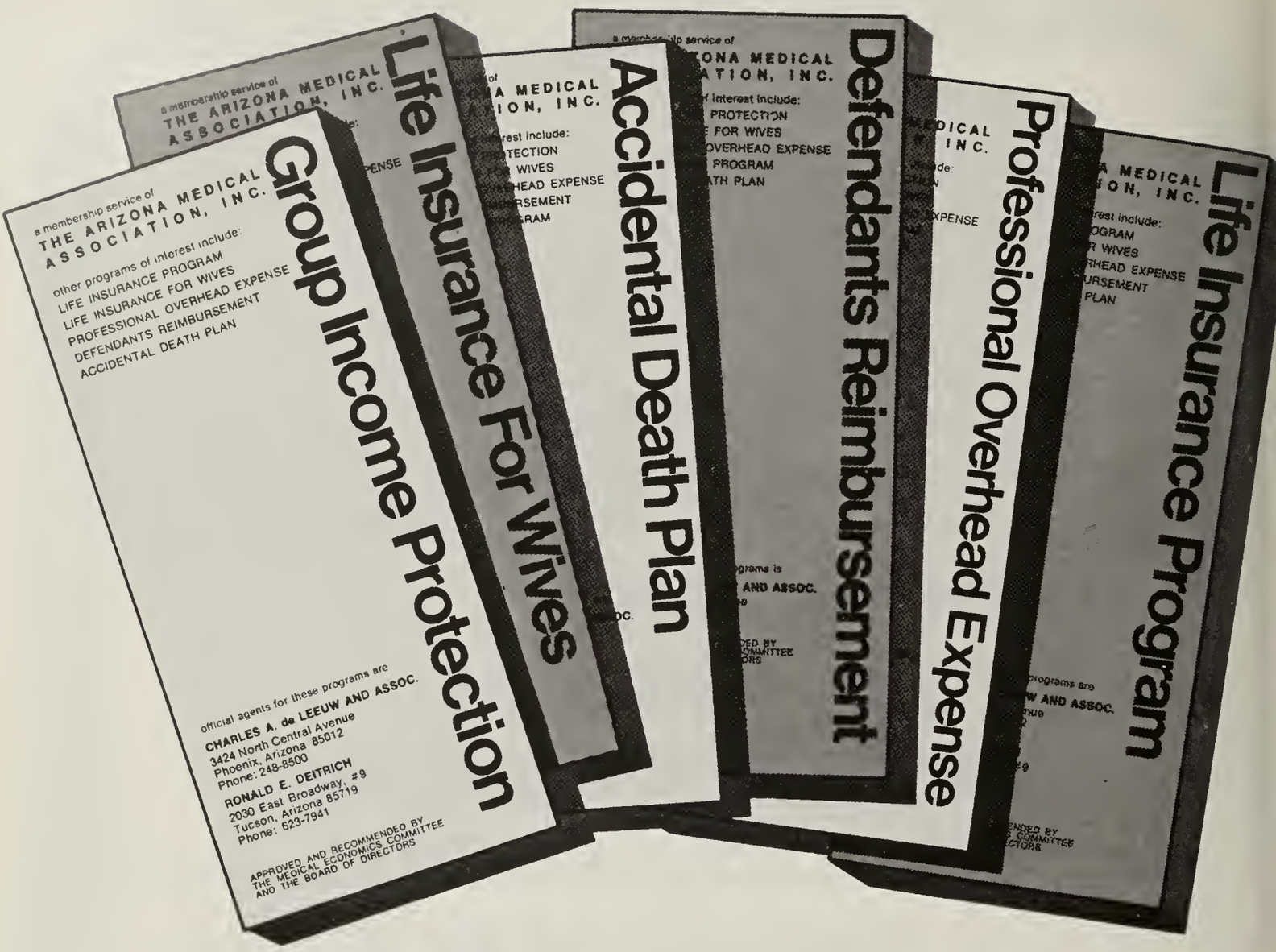
Our doctors treat everything from neonatology to geriatrics, with modern facilities and a highly trained support staff. A medical career in the Air Force offers many other advantages. Reasonable hours with time to spend with your family. Outstanding Air Force Base facilities. Administrative support. Patient treatment without regard for ability to pay. And an excellent educational program is available if you wish to specialize.

For further information, call or write:

CAPT LARRY MARRS or M/SGT JACK McGIVNEY

2020 South Mill Ave., Suite 115 • Tempe, Arizona 85282

Phone: 261-4971



Quality protection
Association approved & recommended

1. These 6 plans were especially created for the medical profession under the auspices of The Arizona Medical Association as a unique membership service. Approved by the Medical Economics Committee.

2. In addition to excellence of coverage there is supervision and control by your Association.

3. In many instances...a substantial saving in required premiums.

4. Inquiries may be directed to the Association office or to the licensed resident agents.

THE ARIZONA MEDICAL ASSOCIATION INC
ORGANIZED 1892 INCORPORATED 1950 ARIZONA

Charles A. deLeeuw and Assoc.
3424 N. Central Ave.
Phoenix, Az. 85012
248-8500

Ronald Deitrich
2030 E. Broadway, Suite 9
Tucson, Az. 85719
792-1020

YOU WORKED HARD



FOR THAT DIPLOMA..

why not have it laminated?

it will last a lifetime....

THE PLAQUE SHOP

Wood plaques — Ready to hang
No glass to break — Moisture proof
Dirt proof — Impressive.
Our plaques are manufactured locally.

arizona laminating service inc

7231 EAST FIRST AVENUE •
SCOTTSDALE, ARIZONA 85251 •
(602) 945-9338

MEDICAL BOOKSTORE



The only bookstore in Arizona devoted exclusively to books for the medical profession.

MEDICAL BOOKSTORE
College of Medicine
University of Arizona
Tucson, Arizona 85724
Phone: 882-6669

HOBBY HORSE RANCH SCHOOL

A School For Exceptional Children

The Hobby Horse Ranch School is both home and school for a small group of children. It welcomes the child who is mentally retarded and physically handicapped as well as the backward child who suffers no physical handicap.

The Hobby Horse Ranch School is a branch of Fairview School in Fishkill, New York which was established in 1936.

Directors: Blanche C. Lightowler, B.A.
Matthew W. Lightowler

P.O.B. 44, Cortaro, Ariz.



Emergency — our business

Air Evac — serving all Arizonans — can be ordered by any physician anytime to transport a patient anywhere. Medically trained flight crew is airborne in 30 minutes.

(602) 254-7150

AIR EVAC

Samaritan Health Service
Phoenix, Arizona

MICA MICA MICA

MUTUAL INSURANCE COMPANY OF ARIZONA

5320 North Sixteenth Street/Suite 106/Phoenix, Arizona 85016

MICA is your Association's response to the availability and affordability of malpractice insurance for Arizona physicians.

For personalized information, call or write:

Phoenix area – 248-9183

Tucson & Yuma areas – Ask operator for Enterprise 269

Sponsored by the Arizona Medical Association

When you call our computer, it talks back.

That's right. It answers in a clear, *human* voice. And tells you, step by step, exactly how to record a customer account transaction. Repeats itself to assure accuracy. Then gives you a total balance for final verification.

It's all push-button easy, because it's all done by touch-tone telephone. All you do is call in on a special Valley Bank number. And have a nice little chat with our talking Accounts Management computer.

Something else. Immediately upon cut-off each month, all the paper work is handled automatically. Itemized customer statements stuffed, mailed out. Duplicates, recaps, reports sent to you promptly.

So if you average over 100 customer statements a month, get acquainted with our talking computer. We'll introduce you. Just call us. In Phoenix: 261-1666. In Tucson: 792-7370.



A touch-tone phone puts you in touch.

We go out of our way for you.
Valley National Bank

VALLEY NATIONAL BANK

More than 160 offices throughout Arizona

Deposits insured to $40,000 by Federal Deposit Insurance Corporation

Pharmacy Directory

FAIRMONT PHARMACY

AN INDEPENDENT
WITH
CHAIN STORE PRICES

3231 East McDowell Road, Phoenix, Arizona

BRidge 5-5719 **Free Delivery**

FREE RADIO EQUIPPED DELIVERY

In Scottsdale call

Lute's Scottsdale Pharmacy

For

PRESCRIPTIONS

3904 N. Scottsdale Rd. 945-8420 - 945-8429

Next to the 1st National Bank

Open 'til 10 p.m. daily — 9 p.m. Sundays

FREE DELIVERY

CALL

254-2606

IF BUSY CALL 252-1573

"Satisfying Customers Since 1920"

- COSMETICS
- SUNDRIES
- SODA BAR
- LIQUOR

MACALPINE'S

DRUG STORE

THE *Rexall* STORE

2303 N. 7th ST.

DON BRISCOE - PHARMACIST

Classified

DANNY T. SEIVERT
INSURANCE

Professional Programs for Professional Men

70 E. Mitchell Dr., Suite 6
Phoenix, Arizona 85012
263-9090



Medical Transcription

MULLEN MEDICAL SERVICE, INC.

4445 North 36th Street
Phoenix, Arizona 85018
Telephone (602) 955-0763

DOCTORS' CENTRAL DIRECTORY

Helen M. Barrasso, R. N., Director

For Emergencies or in Absence of Your Doctor

CALL 327-7471

At Your Service 24 Hours Daily

2807 East Speedway Tucson, Arizona

"Established 1932"

FOR LEASE

In Tucson Medical Park, East I, across street from Tucson Medical Center hospital — 1,694 sq. ft. medical suite with four exam rooms with sinks and cabinets, two doctors' offices, two bathrooms, one shower, large waiting room, large business office and nurse's station with adjacent bookkeeping area. Available approximately June 1, 1976. Call 795-9282.

DOCTOR'S OFFICE BUILDING FOR LEASE

2,165 sq. ft.; excellent location and parking on North Central. Ideal location for family physician. Terms neg. — 718 E. Bethany Home Road. Call 944-4337.

FOR LEASE

New Medical Center across from Yavapai County Hospital in mile high Prescott, Arizona. Only 2 suites remaining. Terrific opportunity for OTO or Dentist. Good lease terms available with doctor owner. Contact Stan Nyquist, Clements Realty (602) 277-7238.

FOR LEASE

Medical Suite with excellent parking, 1300 sq. ft. in Country Club Medical & Dental Center (across from Phoenix Country Club) at 3134 N. 7th Street, Phoenix. Good Lease terms available with dentist owner. Call E. C. Krueger, Ben Brooks & Associates, Inc., (602) 264-1565 for details.

TUCSON

Wilmot Medical Building — adjacent to St. Joseph's Hospital. 720-1620 sq. ft. available. $7.00 sq. ft., includes all utilities, janitorial and maintenance. For information please call (602) 327-5914. Executive Property Management, subsidiary of Schomac Corporation.

SHARE M.D. OFFICE

Tempe surgeon has contemporary oversized office designed for two M.D.'s. . . . Will sublease remainder for low volume type practice in another speciaty. Shalimar Medical Center, Tempe, in view of Desert Samaritan Hospital. Call 838-3130.

WANTED

Semi-retired physician with Arizona license for established medical center; nice facility. Preferably three or four half days a week or more if you desire. Large winter clientele, 90% geriatric. For further information, call Mesa 832-1746 or 832-1770. Leave a message for Hazel Tyler, R.N.

SURGEON WANTED

Board Certified or Board Eligible Surgeon for growing southern Arizona community. New hospital and surgery facilities. Salary negotiable. Join three man group, corporate buy-in, profit sharing, retirement plan. Right person will fill vacancy created by retiring surgeon. Call George A. Spikes, M.D. between 1 and 5 p.m. at (602) 364-3487.

FOR RENT

Canadian Gulf Islands, near Vancouver, 4BR, old house on 10 acres waterfront, beach w/ clams and oysters, dock, hiking, salmon fishing. $295/wk June 15-Sept. 15; $285/mo thereafter. Contact David L. Collins, M.D. 4430 Arista Drive, San Diego, CA 92103.

FOR SALE

3,100 square foot office/home in quality area. Doctor-Owner retiring. Entire home designed and built to convert to single medical complex. Presently utilizing 700 square feet for dental operatories and waiting room. Balance as a residence. Entire building is block construction, including interior walls. Lifetime roof.

Call: Hugh Littlebury
JOHN D. NOBLE AND ASSOCIATES
249-2930 or 992-9181

Index to Advertisers

Air Force 519

Arizona Laminating 521

Armour Pharmaceuticals 432

Blue Shield 442

Burroughs Wellcome
Neosporin Ointment 441

Camelback Hospital 518

Camelback Professional Bldg. 515

Cardiovascular Diagnostics Labs Ltd. 440

Computer Resource Services 439

Classified Ads 524, 525

Doctors Central Directory 524

Everybodys Surgical Supply 436, 437

HBA Life Insurance 514

Hobby Horse Ranch School 521

Intrav
Far East Adventure 516, 517

Key Pharmaceuticals 443

Eli Lilly & Co.
Darvon 444
Nalfon 515

Medical Bookstore 521

Medical Business Consultants 454

Medical Center X-Ray & Clinical Labs 518

Mica Insurance Co. 552

Mullen Medical Service 524

National Casualty Co. 520

Pharmaceutical Manuf. Assoc. 434, 435

Pharmacy Directory 524

Psychiatric Institute of Mexico 440

PVO
Saffola 438

Roche Labs
Valium Second Cover, 431
Gantanol 454, 455
Bactrium Third Cover
Bactrium Fourth Cover

Roerig & Co.
Anitvert 458

Roswell Bookbinding 454

Samaritan Health Service 521

Smith, Kline & French
Dyazide 456

Danny T. Sievert
Insurance 524

Upjohn
Dosepak 457

Valley National Bank 523

THE LIBRARY
UNIVERSITY OF CALIFORNIA
San Francisco
THIS BOOK IS DUE ON THE LAST DATE STAMPED BELOW

7 DAY LOAN

RETURNED
DEC - 3 1976
7 DAY
DEC 16 1976

DEC 16 76 RETD
7 DAY
MAY - 1 1977

RETURNED
APR 25 1977
7 DAY
JUL 26 [illegible]

RETURNED
JUL 29 1977
7 DAY
OCT 19 1977
RETURNED
OCT 12 1977
7 DAY
MAR 30 1978
RETURNED
MAR 24 [illegible]

15m-6,'73(R176884)4315-A33-9

317628